29

SERVICE MANUAL 5010

marantz

model 5010

Stereo Cassette Deck

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INTRODUCTION

This service manual and prepared for use by Authorized Warranty Station and contains service information for Marantz Model 5010 Stereo Cassette Deck.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operation of the Cassette Deck.

The parts list furnishes information by which replacement parts may be ordered from the Marantz Company. A simple description is included for parts which can be usually obtained through local suppliers.

1. P.W. BOARDS

As can be seen from the circuit diagram, the chassis of Model 5010 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. Pre-Amp, Power Supply & Dolby . . . . mounted on P.W. Board, P100
2. LED . . . . mounted on P.W. Board, P600
3. Terminals . . . mounted on P.W. Board, P700
4. Fuse (N&P versions only) . . . . . . mounted on P.W. Board, P400

2. TEST EQUIPMENT REQUIRED FOR SERVICING

For measuring or checking the Model 5010, the following instruments and materials are necessary.

- VTVM
- Audio Oscillator (af OSC)
- Attenuator (600 Ω)
- Oscilloscope
- Bandpass Filter (1 kHz, 500 Hz)
- IEC A-Curve Filter
- Wow and Flutter Meter
- Torque Meter (Cassette Type)
- Digital Frequency Counter
- Distortion Meter
- Blank Tapes (Completely erased with bulk eraser)
  TDK AC-211 (Normal)
  TDK AC-511 (CrO_2)
  SONY CS-30 (Fe-Cr)

NOTE: If any doubt is noted in a measured value, use new tape.

- Test Tapes (New Tape)

MTT-111	Wow and Flutter Tape Speed
MTT-112	Measurement of Output Level Signal-to-Noise Ratio
MTT-150	Adjustment of Output Level
MTT-116U	Frequency Response (for Normal)
MTT-116K	Frequency Response (for CrO_2, Fe-Cr)
MTT-121	Cross Talk
MTT-141	Channel Separation

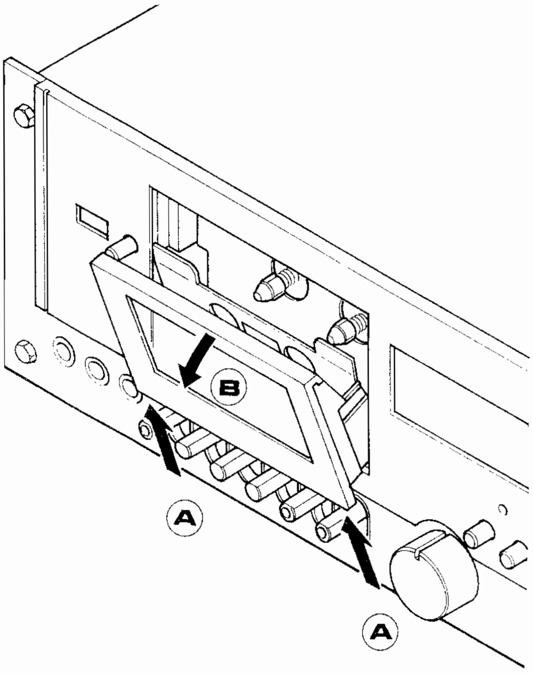
BIAS and EQ switches setting in accordance with tape used are as follows:

Tape	**Switch Position**	
	BIAS Switch	**EQ Switch**
SDC-60	■	■
SAC-60	▬	▬
CS-30	■	▬

3. DISASSEMBLY

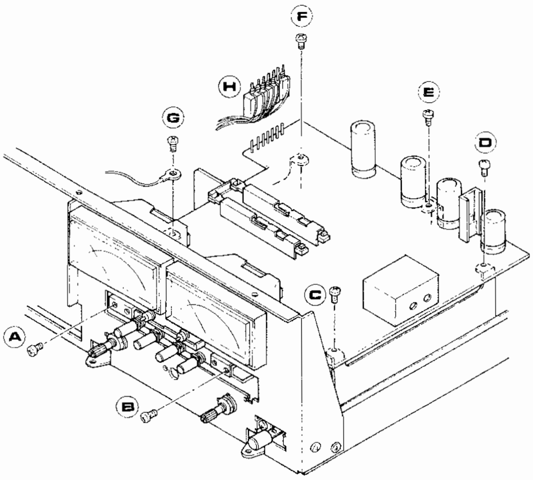
3.1 REMOVING THE CASSETTE CASE ESCUTCHEON

Push the cassette case escutcheon at the two positions upward in the arrow A direction. As it will be detached, take it out in the arrow B direction.



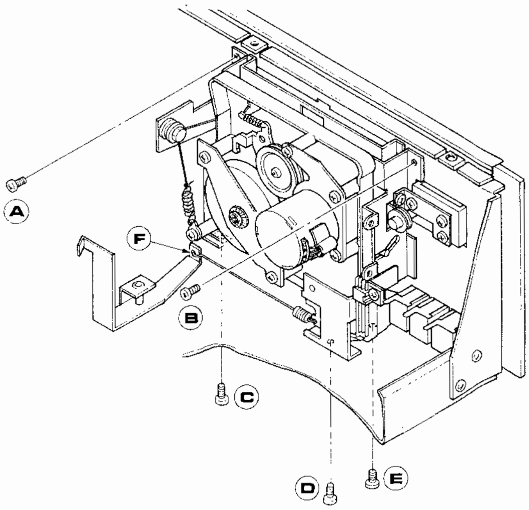
3.2 REMOVING THE MAIN P.W. BOARD

Remove the seven screws A, B, C, D, E, F and G holding the Main P.W. board. Unplug the connector H. Then, draw it out with taking care of not applying excessive force to any lead wire.



3.3 REMOVING THE MECHANICAL CHASSIS

Remove the five screws A, B, C, D, and E holding the mechanical chassis. Remove the record lever spring assembly F. Then, draw the chassis out with taking care of the tape counter and operating levers.

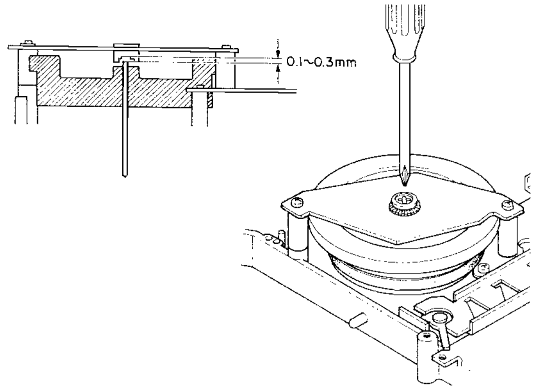


4. ADJUSTMENT PROCEDURES

4.1 MECHANICAL ADJUSTMENTS

4.1.1 Adjusting the Flywheel Thrust

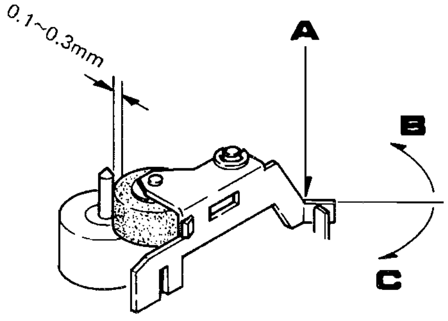
Adjust the thrust screw at the flywheel bracket until the clearance between the capstan tail end and thrust bearing is 0.1 to 0.3 mm as shown, using a phillips screw driver. For adjusting, feel of axial dropping of the flywheel for proper clearance as this cannot been seen through. Then paint the screw to lock.



4.1.2 Adjusting Pause Timing

Set the unit in the play mode of operation. Then, adjust the bend angle of the pinch roller bracket arm (point A in the line drawing) until the clearance between the pinch roller and capstan is 0.1 to 0.3 mm at the time when the take-up reel is stopped by slowly pressing the PAUSE push-button down.

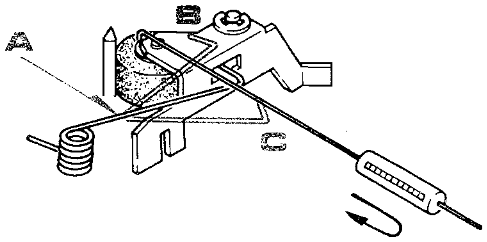
NOTE: **To widen the clearance, make the bend angle smaller (in the direction C). To make the clearance narrower, widen the bend angle (in the direction B).**



4.1.3 Adjusting the Pinch Roller Pressure

Measure the pressure of the pinch roller using a gauge as shown. For measurement, draw the pinch roller in the arrow direction in which it is detached from the capstan shaft and gradually return it toward the capstan. Read the gauge at the time when the pinch roller starts turning. The standard pressure is 300±50 g. If the pressure is out of the range, bend the pinch roller spring around the point A in the direction B or C.

NOTE: **To make the pressure strong, bend in the direction B. To make the pressure weak, bend in the direction C.**



4.1.4 Adjusting the Play Timing

It is normal that when the PLAY pushbutton is depressed, the take-up reel table turns first, then the pinch roller is rotated. The reel table and pinch roller must not start turning at the same time.

NOTE: **Make certain that such a subsequent operation is made irrespective of locking state is depressed slowly without loading the tape.**

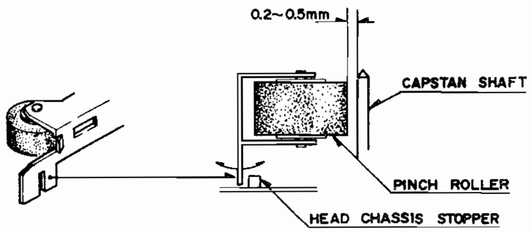
(1) Checking for adjustment

Check whether or not the clearance between the pinch roller and capstan is 0.2 to 0.5 mm when the take-up reel table starts turning with the PLAY pushbutton depressed slowly.

(2) Adjustment

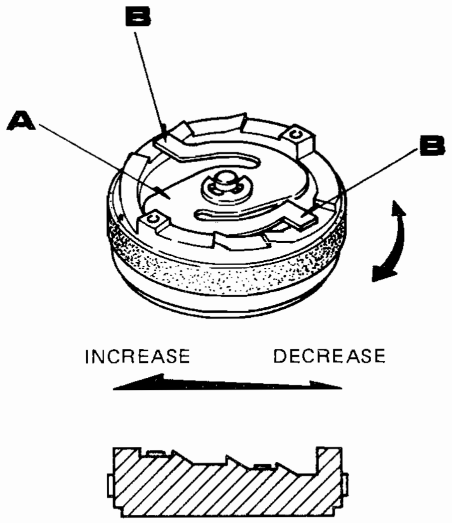
Bend the pinch roller bracket at the point that touches the head chassis stopper. In the line drawing, bending left reduces the clearance between the capstan and pinch roller.

NOTE: **Make certain that the pinch roller bracket does not leave touching the head chassis stopper in the play mode of operation as a result of excessive bending.**



4.1.6 Adjusting the Fast Forward and Rewind Torque

The fast forward and rewind idler has a torque adjust plate spring (part A in the line drawing), which has two pawls (part B) at its ends. Set the pawls in proper one of the three steps. To make the torque high, set the pawls in the shallowest step. For lower torque, set in the deepest step.

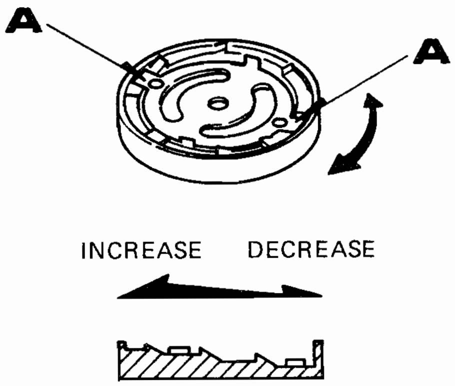


4.1.5 Adjusting the Play Torque

Put the two pawls of the circular plate spring on proper stepped position of the reel rest. The adjustable torque range is 40 to 70 g·cm.

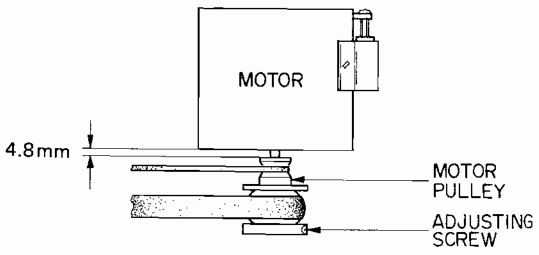
To make the torque high, put the pawls on a shallow step. For lower torque, put them on a deeper step.

- **Checking the take-up clutch for sliding**
  Make certain that the flywheel rotates freely when the reel table is locked. The flywheel that revolves irregularly or stops is not acceptable.



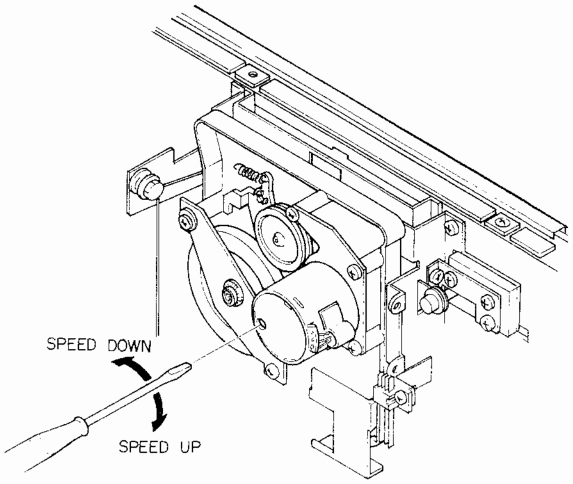
4.1.7 Positioning the Motor Pulley

Loosen the set screw and adjust the motor pulley position until the clearance between the pulley and motor is 4.8 mm as shown. Tighten the set screw.


MOTOR
4.8mm
MOTOR PULLEY
ADJUSTING SCREW

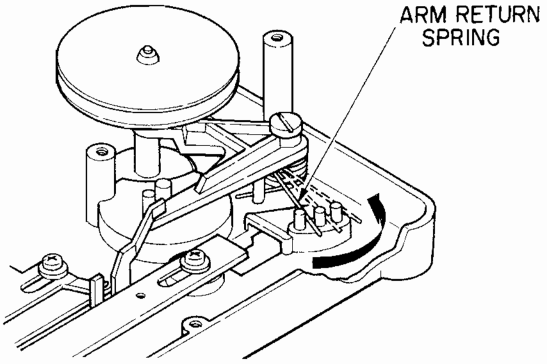
4.1.8 Adjusting the Tape Speed

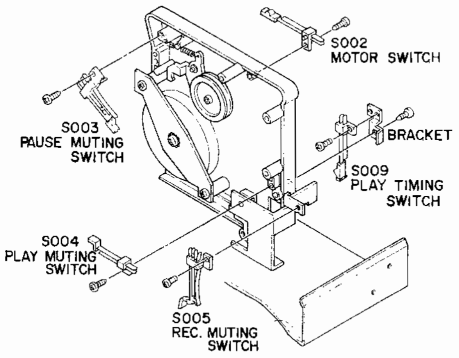
Adjust the semi-fixed resistor inside the motor until the tape speed is 2985±5Hz, using a screw driver.


SPEED DOWN
SPEED UP

4.1.9 Adjusting the Rewind Idler Side Pressure

Make certain that in the rewind mode of operation, the rewind idler does not slip on the supply reel table when this is held by hand. If it slips, change the hanging position of the rewind idler arm return spring on the chassis in the arrow direction step by step until it does not slip.

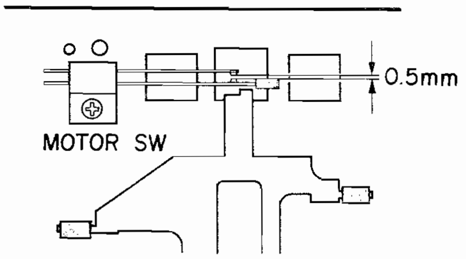

ARM RETURN SPRING


S002
MOTOR SWITCH
S003
PAUSE MUTING SWITCH
BRACKET
S009
PLAY TIMING SWITCH
S004
PLAY MUTING SWITCH
S005
REC. MUTING SWITCH

4.1.10 Positioning the Switches

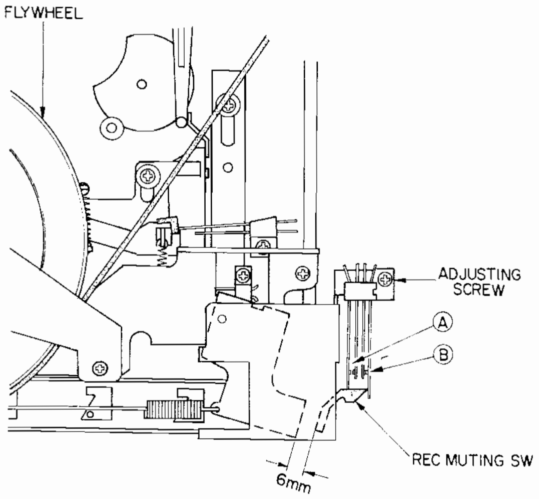
(1) Motor switch

Turn the motor switch in the arrow direction until it is screwed tightly. Make certain that the contact gap is wider than 0.5 mm.


0.5mm
MOTOR SW

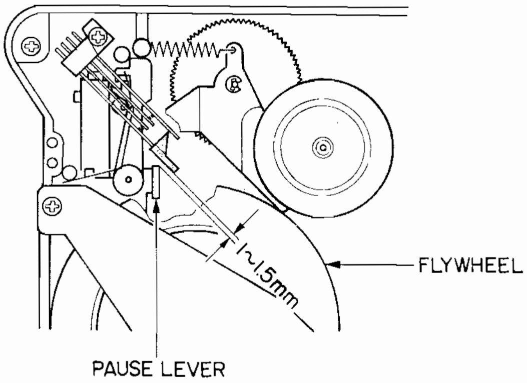
(2) Record muting switch

In the stop state, loosen the screw holding the record muting switch and position this so that the clearance between its end mold tip and mounting bracket may be 6 mm. Tighten the screw. Make certain that when the record lever is pressed in, the record muting switch contact A is made close and the contact B is broken out securely.


FLYWHEEL
ADJUSTING SCREW
Ⓐ
Ⓑ
REC MUTING SW
6mm

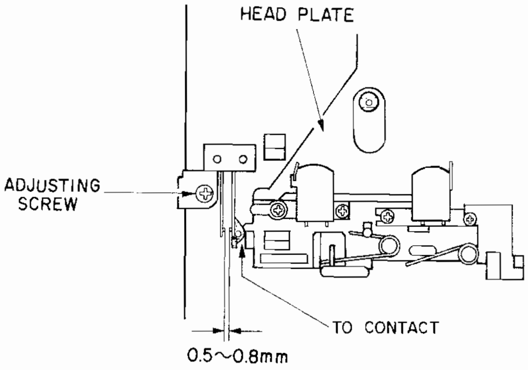
(3) Pause muting switch

In the stop state, loosen the screw holding the pause muting switch and position this so that the clearance between its end tip and pause arm may be 1 to 1.5 mm.


1~1.5mm
FLYWHEEL
PAUSE LEVER

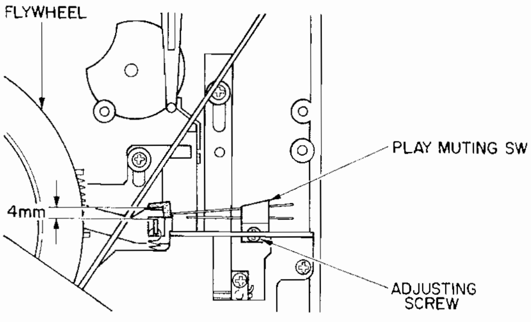
(4) Start muting switch

In the stop state, loosen the screw holding the start muting switch and position this so that its contact clearance may be 0.5 to 0.8 mm with leaving the contact tip in contact with the head plate. Tighten the screw.


HEAD PLATE
ADJUSTING SCREW
TO CONTACT
0.5~0.8mm

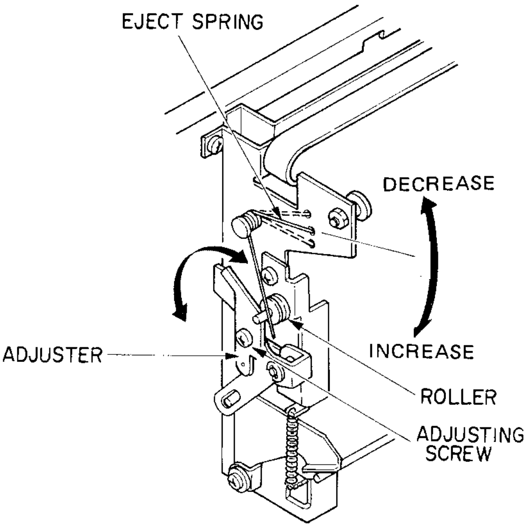
(5) Play muting switch

In the stop state, loosen the screw holding the play muting switch and position this so that the clearance between its end tip and play lever may be 4 mm.


FLYWHEEL
PLAY MUTING SW
4mm
ADJUSTING SCREW

4.1.11 Setting the Eject Spring

Hang the eject spring at proper one of the three holes so that the cassette lid can be opened well. After setting, bond the spring to lock.



4.1.12 Adjusting the Interlocking Mechanism

IMPORTANT: In aligning the mechanical assembly, place it alone.

1. Lay the mechanical assembly by its side as shown in Figure 1.
2. Loosen the screw E holding the adjuster C a little until this moves freely.
3. Adjust the interlock cam B by finger until the clearance between the interlock cam B and the lock cam release arm A is 0.1 to 0.5 mm.
4. Keeping this clearance, tighten the screw E to fix the adjuster C, which will be in light contact with the cassette guide shaft D.
5. After completion of Steps 1 through 4, perform checking by proceeding as follows.
   a. Open the cassette door by pressing the STOP/EJECT pushbutton.
   b. Close the cassette door slowly by hand. Make certain that the PLAY pushbutton will not move in the range of the position A to B in Figure 2 while the cassette door is closed.
   NOTE: The cassette door is locked at the position C.

CAUTION

If the PLAY pushbutton is locked in that range, replace the following parts as these may be defective.

REF. DESIG.	PART NO	DESCRIPTION
811N	438305402-0	Cam
L	438005140-0	Guide ass'y

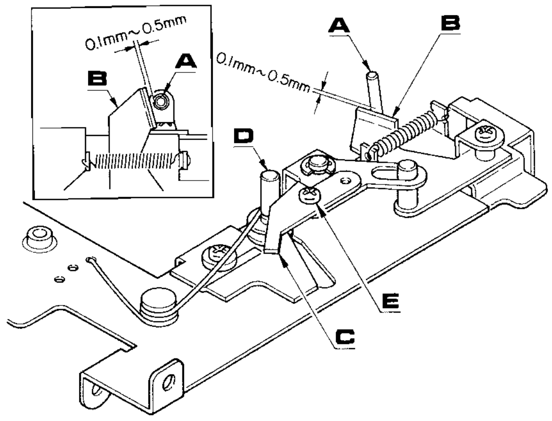


Fig. 1

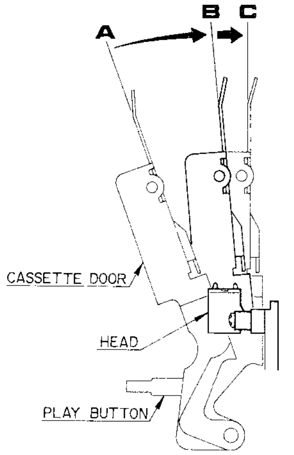


Fig. 2

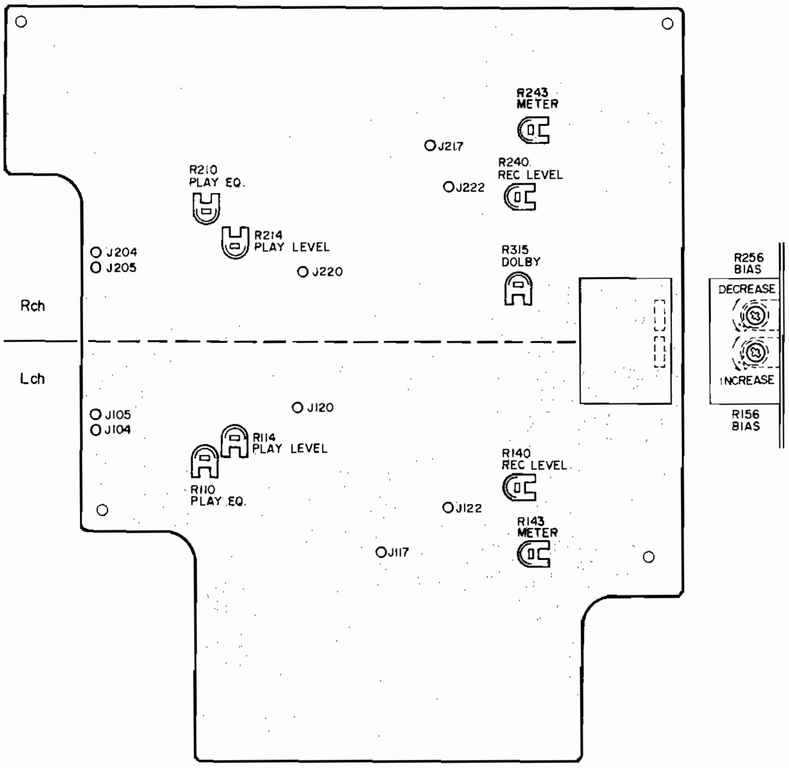
4.2 ELECTRICAL ADJUSTMENTS AND MEASUREMENTS

Precautions Before Adjustment and Measurement

1. Before playing the test tape back, thoroughly demagnetize the heads, capstan and similar metal parts using an eraser as the test tape-recorded tone is easily erased.
2. Do not place the test tape on any measuring instrument.
3. Do not put the test tape near a place where the eraser is used.
4. Method of Demagnetization:—Turn the eraser power switch on at a remote position far away from the heads. Bring the eraser close to the heads, capstan and other parts to be demagnetized, and move it up and down four or five times to demagnetize. Slowly separate the eraser far away from the parts, and turn the power switch off.
5. Do not use any magnetized adjusting tool. When using it, demagnetize it from time to time in the course of each adjustment.
6. Do not turn semi-fixed resistor, capacitor, and inductor adjusting screws more than needed.
7. If measuring the tape speed wow and flutter, operate the tape deck in the normal operating condition.
8. Do not apply locking bond excessively.

Definitions

1. The "normal playback state" is an operating state of the tape deck which plays back the MTT-150 test tape and is adjusted so as to produce a 775mV output at the MAIN P.W. Board (P100) J120, J220 with the load assuming the measuring instrument input impedance of greater than 100kΩ and with the TAPE selector switch set at the NORMAL position.
2. The "normal recording state" is an operating state of the tape deck which records a 1kHz signal to a specified recording level for which the recording level control is adjusted with the 1kHz signal applied at a specified input level to the MIC input terminal.
   In the normal recording state, therefore, this tape deck is set up with the level control to the state that the level meter pointer may deflect to the 100% mark as 0VU with a 1kHz, 1mV input signal applied.


R243
METER
J217
R240
REC LEVEL
J222
R210
PLAY EQ.
R214
PLAY LEVEL
J204
J205
J220
R315
DOLBY
R256
BIAS
DECREASE
INCREASE
R156
BIAS
Rch
Lch
J105
J104
J120
R114
PLAY LEVEL
R110
PLAY EQ.
R140
REC LEVEL
J122
R143
METER
J117

1. Head Azimuth Adjustment

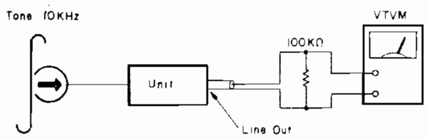
SET UP

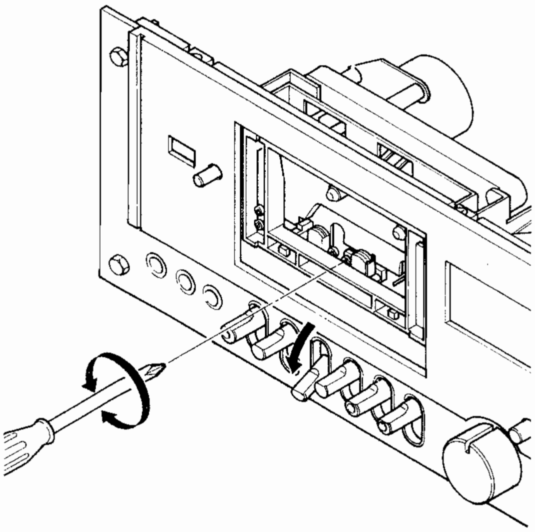
1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. TAPE selector switch position:- NORMAL.
3. Load:- Measuring instrument input impedance.
4. Output terminal used:- LINE OUT.
5. Test tape used:- MTT-116U (31.5Hz to 14kHz).

PROCEDURES

1. Play the 10kHz portion of the test tape MTT-116U back. Adjust the head azimuth adjusting screw for maximum VTVM read.
2. If the peak output reads of the right and left channels are different, set the screws to obtain the mechanical center between the peaks.
3. After adjustment, lock the screw with bond.

Mode: playback





CAUTION

After adjustment, repeat the playback and stop setting a few times to make certain of no head azimuth deviation.

2. Tape Speed Adjustment

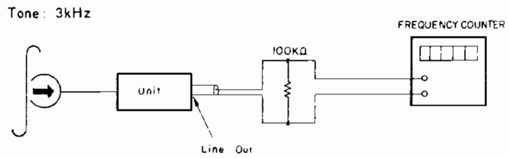
SET UP

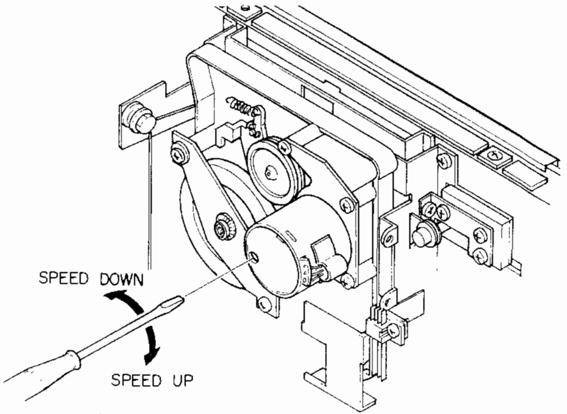
1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Output terminal:- LINE OUT.
3. Test tape used:- MTT-111.
4. Unit position:- Horizontal.

PROCEDURES

1. Play the mid portion of the test tape MTT–111 back. Adjust the tape speed adjusting semi-fixed resistor for 2990 to 3010Hz counter indication.

Mode: playback





CAUTIONS

1. For adjustment, the tape deck should be set up in the normal operating condition.
2. Do not adjust the semi-fixed resistor more turns than needed.
3. Do not proceed with adjustment after the tape deck temperature has changed.
4. If a strong shock or similar vibration is applied to the tape deck after adjustment, make certain that the measured tape speed had not changed.
5. If the tape speed deviation occurs, perform the adjustment again.
6. Be careful that the counter may indicate a wrong value because of too low counter input level.
7. Before adjustment, allow for 30 seconds or more after depressing of the PLAY push-button.

3. Playback Equalizer Adjustment

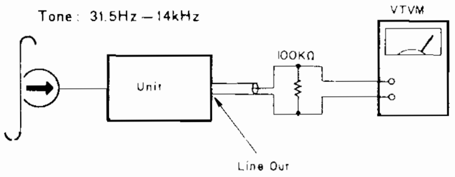
SET UP

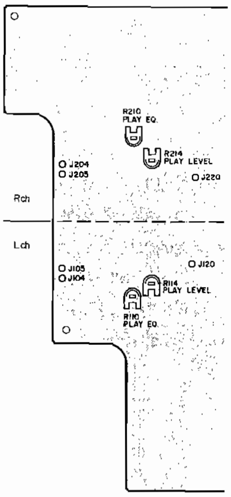
1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. TAPE selector switch position:- NORMAL.
3. Load:- Measuring instrument input impedance.
4. output terminal:- LINE OUT.
5. Test tape used:- MTT-116U (31.5Hz to 14kHz).

PROCEDURES

1. Play the test tape MTT-116U. Let the 315Hz signal level be reference as 0dB.
2. Adjust R110 and R210 (3kΩ each) for 10kHz frequency response of 0 to −1dB in reference to the 315Hz signal level (0dB).
3. Proceed both for the right and left channels in the same manner.
4. Note that clockwise turning of R110 and R210 will increase the 10kHz signal output level.

Mode: playback


Tone : 31.5Hz – 14kHz
VTVM
100KΩ
Unit
Line Out


R210
PLAY EQ.
R214
PLAY LEVEL
J204
J205
J220
Rch
Lch
J105
J104
J120
R114
PLAY LEVEL
R110
PLAY EQ.

4. Playback Output Adjustment

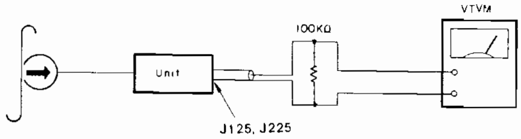
SET UP

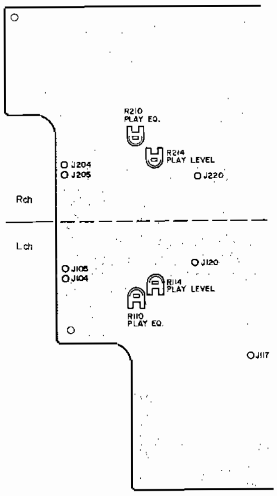
1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. TAPE selector switch position:- NORMAL.
3. Load:- Measuring instrument input impedance.
4. Output terminal:- MAIN P.W. Board (P100) J120 and J220.
5. Test tape used:- MTT-150.

PROCEDURES

1. Play the test tape MTT-150 back. Adjust R114 and R214 (50kΩ each) for 775mV playback output level.
2. Proceed both for the right and left channels in the same manner.

Mode: playback


VTVM
100KΩ
Unit
J125, J225


R210
PLAY EQ.
R214
PLAY LEVEL
J204
J205
J220
Rch
Lch
J105
J104
J120
R114
PLAY LEVEL
R110
PLAY EQ.
J117

CAUTION

1. This adjustment should be performed after the one for the playback equalizer. If the playback equalizer is adjusted after the playback output adjustment, the playback output should be readjusted.

5. VU Meter Adjustment

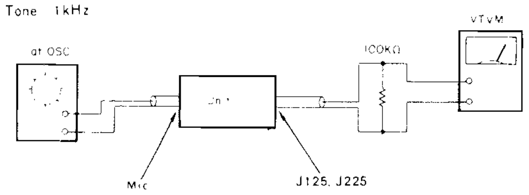
SET UP

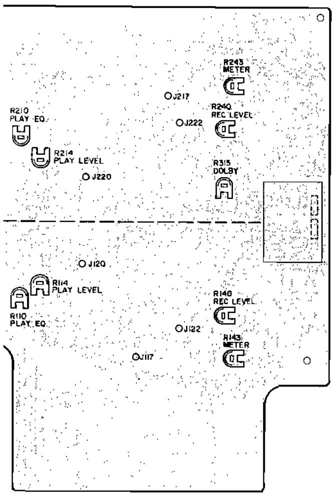
1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. TAPE selector switch position:- NORMAL.
3. Load:- Measuring instrument input impedance.
4. Output terminal used:- MAIN P.W. Board (P100) J120 and J220.
5. Input terminal:- MIC.

PROCEDURES

1. Connect a 1kHz, –60dBV input signal to the MIC terminal. Set up the tape deck for the recording mode of operation.
2. Adjust the REC control for **775mV** output level at MONI. OUT of the MAIN P.W. Board (P100) **J120** and **J220.**
3. Adjust R143 and R243 (3kΩ each) until the VU meter pointer deflects to the DOLBY mark (DD) on the VU meter.

Mode: record


Tone 1kHz
af OSC
Unit
100KΩ
VTVM
Mic
J125, J225


R243 METER
OJ217
R240 REC LEVEL
OJ222
R210 PLAY EQ.
R214 PLAY LEVEL
OJ220
R315 DOLBY
OJ120
R114 PLAY LEVEL
R110 PLAY EQ.
R140 REC LEVEL
OJ122
R143 METER
OJ117

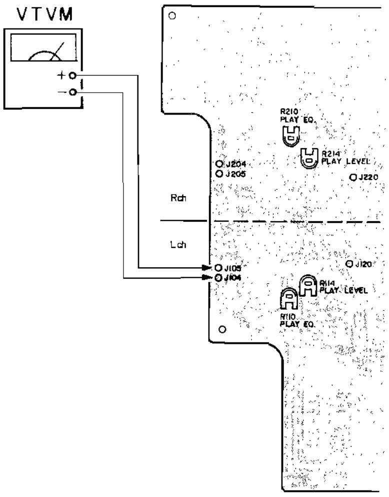
6. Recording Bias Current Adjustment (Temporal)

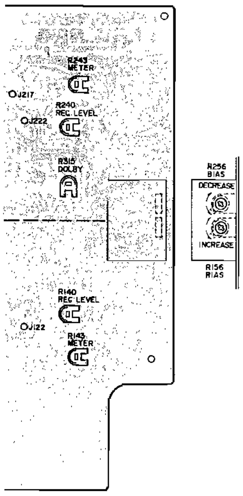
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. TAPE selector switch:- NORMAL.

PROCEDURES

1. Set up the tape deck in the recording mode of operation. Connect the VTVM to **J104, J105 (Lch)** and **J204, J205 (Rch).** Adjust the semifixed resistor **R156** and **R256** for **3.5mV VTVM read.**
2. Proceed both for the right and left channels in the same manner.
3. For the tape deck equipped with the TAPE selector switch, make certain that the VTVM reads approximately **4.5mV** with it set to the CrO_2 position.


VTVM
+
–
R210 PLAY EQ.
R214 PLAY LEVEL
OJ204
OJ205
OJ220
Rch
Lch
OJ105
OJ104
OJ120
R114 PLAY LEVEL
R110 PLAY EQ.


R243 METER
OJ217
R240 REC LEVEL
OJ222
R315 DOLBY
R256 BIAS
DECREASE
INCREASE
R156 BIAS
R140 REC LEVEL
OJ122
R143 METER

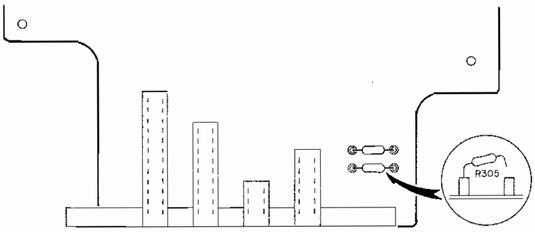
7. Recording Current Adjustment (Temporal)

SET UP

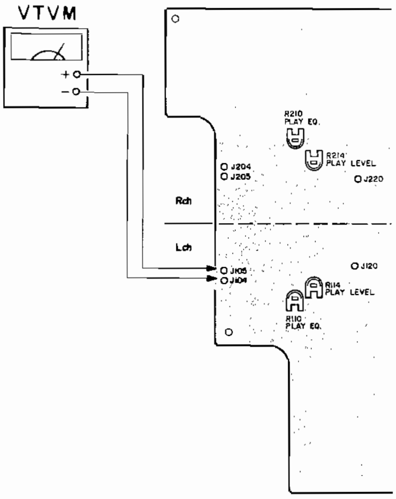
1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Input signal:- 1kHz, −60dB signal.
3. TAPE selector switch positions:- NORMAL.
4. Load:- Measuring instrument input impedance.

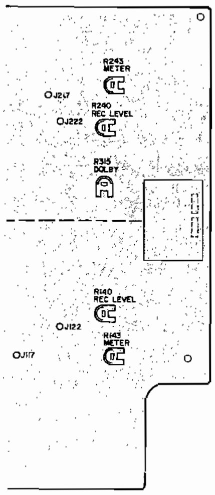
PROCEDURES

1. Stop the recording bias current oscillation by disconnecting the bias circuit +B resistor (R305).



2. Set up the tape deck to the normal recording state. Connect the VTVM to J105, J104 (L ch) and J205, J204 (R ch). Adjust the semifixed resistors R140 and R240 until the VTVM reads 0.35mV, respectively.
3. Proceed both for the right and left channels in the same manner.
4. After adjustment, release the recording bias current.


VTVM
+
−
R210
PLAY EQ.
R214
PLAY LEVEL
J204
J205
J220
Rch
Lch
J105
J104
J120
R114
PLAY LEVEL
R110
PLAY EQ.


R243
METER
J217
R240
REC LEVEL
J222
R315
DOLBY
R140
REC LEVEL
J122
R143
METER
J117

8. Reocrd-Playback Frequency Response Adjustment

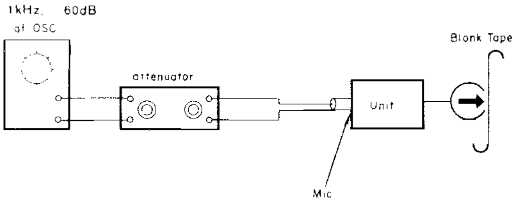
SET UP

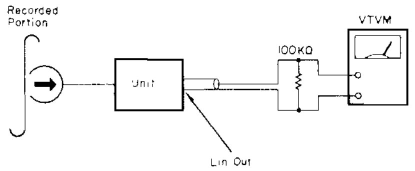
1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Input signal:- 1kHz, –60dB with –20dB referenced as 0VU.
3. TAPE selector switch:- Fe-Cr.
4. Output terminal:- LINE OUT.
5. Load:- Measuring instrument input impedance.
6. Test tape used:- SONY CS-30.

PROCEDURES

1. Connect the input signal to the MIC terminal. Set up the tape deck to the normal recording state.
2. In turn, reduce the input level by 20dB with the use of the attenuator. Record the 1 and 10kHz tones.
3. Play the 1kHz, 20dB-down recorded tone back as 0dB. Adjust the recording bias current until the 10kHz response is within ±1dB as referenced to the 1kHz, 0dB response.
4. Proceed both for the right and left channels in the same manner.
5. If the recording bias current is reduced in the above adjustment, be sure to measure the distortion.

Mode: record


1kHz, 60dB
af OSC
attenuator
Unit
Blank Tape
Mic


Recorded Portion
Unit
100KΩ
VTVM
Lin Out

9. Record-Playback Output Level Adjustment

SET UP

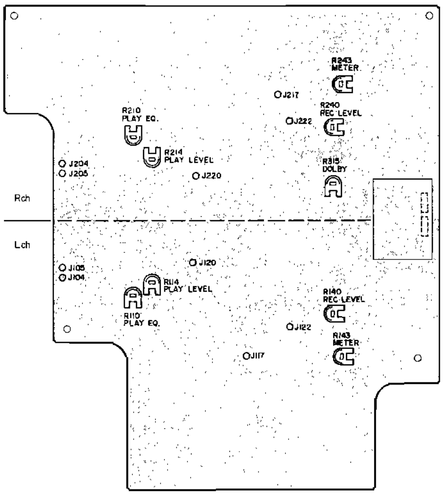
1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Input:- 1kHz, –60dB signal.
3. TAPE selector switch position:- NORMAL.
4. Output terminal:- MAIN P.W. Board (P100) J120 and J220.
5. Load:- Measuring instrument input impedance.
6. Test tape used:- TDK AC-211.

PROCEDURES

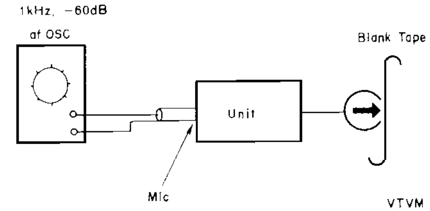
1. Connect the 1kHz, –60dB input signal to the MIC terminal. Set up the tape deck to the normal recording state.
2. Adjust the REC LEVEL semi-fixed resistors R140 and R240 until the recorded signal is reproduced at 623mV ±0.5dB.

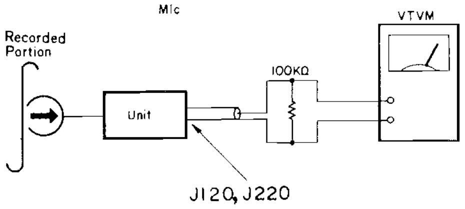
CAUTION

1. If the bias current is changed, be sure to perform the above adjustment.


R243
METER
J217
R240
REC LEVEL
J222
R210
PLAY EQ.
R214
PLAY LEVEL
J204
J205
J220
R315
DOLBY
Rch
Lch
J120
J105
J104
R114
PLAY LEVEL
R110
PLAY EQ.
R140
REC LEVEL
J122
R143
METER
J117

Mode: record


1kHz, –60dB
af OSC
Unit
Blank Tape
Mic


Recorded Portion
Unit
100KΩ
VTVM
J120, J220

10. Adjusting the Dolby Circuit

(1) Encoder circuit

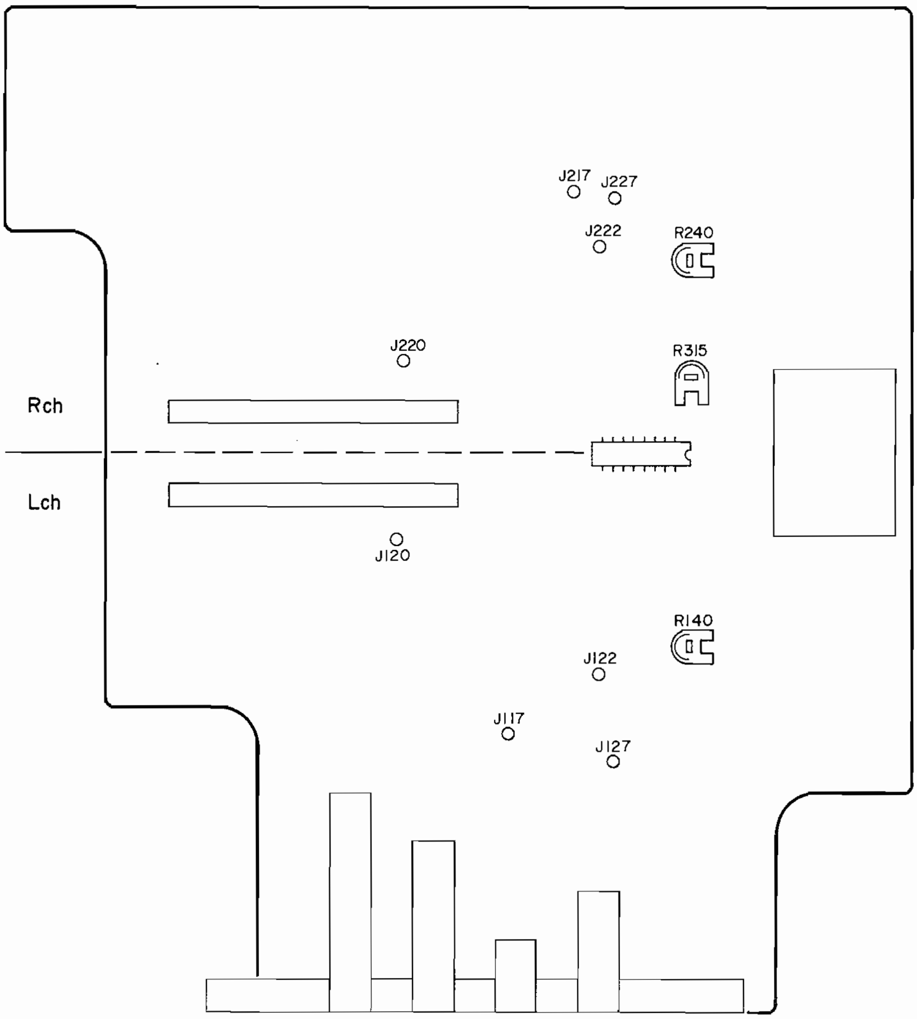
1. Set the 5010 in the recording mode of operation.
2. Set the DOLBY NR switch to the OFF position.
3. Connect a 5 kHz signal to the MIC input jack.
4. Adjust the input signal level until the output voltage at J120 or J220 is 23.5 mV.
5. In that state, measure the output level at the REC OUT jack J122 or J222 provided for the DOLBY NR switch.
6. Turn the DOLBY NR switch to the ON position.
7. Adjust the LAW CONT semi-fixed resistor R315 until the output level at J122 or J222 is 8±0.25 dB higher than the one obtained in Step 5 above.

(2) Decoder circuit

1. Set the 5010 in the playback mode of operation.
2. Set the DOLBY NR switch to the OFF position.
3. Connect a 5 kHz signal to J117 or J217..
4. Adjust the input signal level until the output voltage at J200 or J220 is 59 mV.
5. Turn the DOLBY NR switch to the ON position.
6. Make certain that the output level at J120 or J220 is 8±0.5 dB lower than the one obtained in Step 4 above.

CAUTIONS

1. **If the output level is not in the above-mentioned allowable range, repeat adjustment beginning with the encoder circuit, not from the circuit in any case.**
2. **The LAW CONT semi-fixed resistor R315 serves for both right and left channles. Adjustment therefore may be made either for the right or left channel.**



11. Tape Speed Measurement

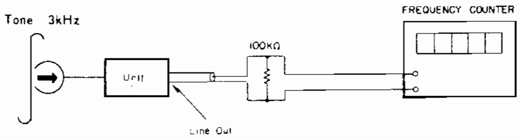
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Output terminal:- LINE OUT.
3. Test tape used:- MTT-111.
4. Set position:- Horizontal

PROCEDURES

1. Play the wound-up end of the test tape MTT-111 back. Read the frequency counter indication.

Mode: playback



STANDARD

Tape speed:- 4.8cm/sec +2, −2%.
Frequency: 2950 to 3050Hz.

CAUTION

The tape deck should be leveled as specified for this measurement.

12. Wow and Flutter Measurement

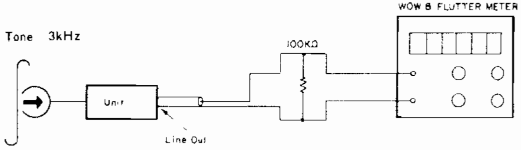
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Output terminal:- LINE OUT.
3. Load:- Measuring instrument input impedance.
4. Test tape used:- MTT-111.
5. Set position:- Horizontal.
6. **Wow & flutter meter function switch:**-NAB **WTD- for U and C, DIN WTD- for N.**

PROCEDURES

1. Play the test tape MTT-111 back. Read the wow & flutter meter indication.

Mode: playback



STANDARD

Less than NAB WTD 0.11% in rms (for U and C).
Less than DIN WTD 45511B4 0.16% in rms (for N).

CAUTION

The measurement should be performed at the wound-up end of the test tape.

13. Playback Output Level Measurement (at LINE OUT)

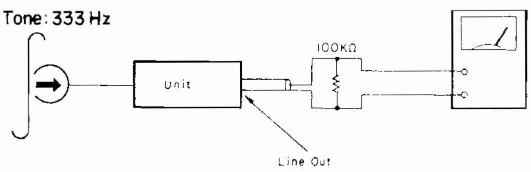
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. TAPE selector switch position: NORMAL.
3. Load:- Measuring instrument input impedance.
4. Output terminal:- LINE OUT.
5. Test tape used:- **MTT-112.**

PROCEDURES

1. Play the test tape back in the normal playback state. Read the VTVM indication.
2. Proceed both for the right and left channels in the same manner.

Mode: playback



STANDARD

Within 800mV ±3dB.

14. Playback Signal-to-Noise Ratio Measurement

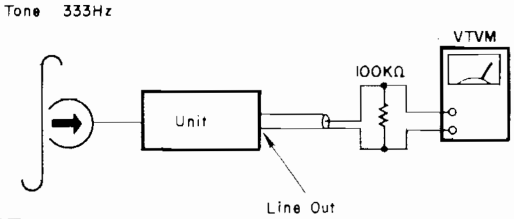
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Load:- Measuring instrument input impedance.
3. Measuring output terminal:- LINE OUT.
4. Test tape used:- MTT-112 (333Hz tone).
5. TAPE selector switch position:- NORMAL, CrO_2 and Fe-Cr.

PROCEDURES

1. Load the test tape MTT-112. Set up the tape **deck to the normal playback state with the use of the I.E.C. A-Curve filter.**
2. Read playback output as a 0dB reference. Then playback blank tape and note the output level drop in dB.
3. Proceed both for the right and left channels in the same manner.
4. Repeat the above measurement for each TAPE selector switch position.

Mode: playback



STANDARD

Greater than 52dB.

CAUTIONS

1. Arrange the tape deck power cord for minimum hum component.
2. Effect by induction noises should be minimized for the measurement.
3. When playing the standard reference level tape MTT-112 back, the VU meter indication is close to +2.5 VU and is used as the reference level for the signal-to-noise ratio measurement.

15. Playback Frequency Response Measurement

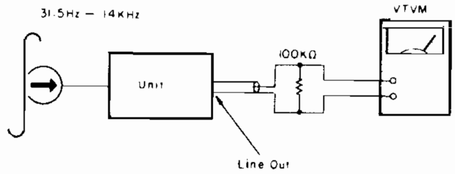
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. TAPE selector switch position:- NORMAL and CrO_2 or Fe-Cr.
3. Load:- Measuring instrument input impedance.
4. Measuring output teminal:- LINE OUT.
5. Test tape used:-
   MTT-116U (for NORMAL).
   MTT-116K (for CrO_2 or Fe-Cr).

PROCEDURES

1. Play the test tape MTT-116U and MTT-116K back. Let the 315Hz output level be 0dB as reference level.
2. Read the 40Hz and 10kHz output level differences from the 315Hz, 0dB reference level.
3. Proceed both for the right and left channels in the same manner.
4. For the above measurement, use the test tape MTT-116U for the NORMAL position and MTT-116K for the CrO_2 or Fe-Cr.

Mode: playback



STANDARD

In reference to the 315Hz, 0dB signal output level,

40Hz - 6.3kHz . . . . . . ±2.5dB
6.3kHz - 10kHz . . . . . . +2.5, –3dB
14kHz . . . . . . ±4dB

CAUTION

Since the test tapes used may involve some head azimuth difference, the head azimuth should be corrected at the highest frequency of each test tape before measurement.

16. Record-Playback Output Level Measurement (at LINE OUT)

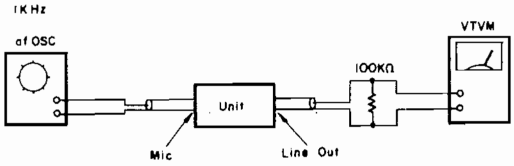
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Input: 1kHz, –60dB signal.
3. Load:- Measuring instrument input impedance.
4. Level control position:- SRL for recording operation.
5. TAPE selector switch position:- NORMAL, CrO_2 and Fe-Cr.
6. Measuring output terminal:- LINE OUT.
7. Cassette tape used:- TDK AC-211, AC-511 and SONY CS-30.

PROCEDURES

1. Record the 1kHz, –60dB signal in the normal recording state.
2. Play the recorded signal back. Read the VTVM indication.
3. Proceed for the NORMAL, CrO_2 and Fe-Cr positions each in the same manner.
4. Proceed both for the right and left channels in the same manner.

Mode: reocrd



STANDARDS

1. NORMAL position: 430mV ± 3dB.
2. CrO_2 position: 430mV ± 3dB.
3. Fe-Cr position: 430mV ± 3dB.

17. Record-Playback, Harmonic Distortion Measurement

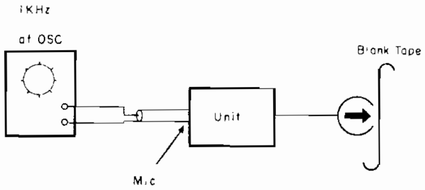
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Input:- 1kHz, –60dB signal.
3. Playback output level:- Same as the recorded signal level.
4. Load:- Measuring instrument input impedance.
5. Measuring output terminal:- LINE OUT.
6. Cassette tape used:- TDK AC-211, AC-511 and SONY CS-30.

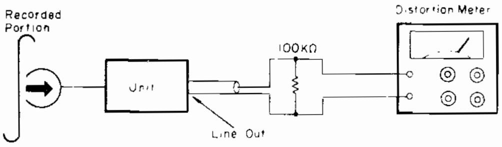
PROCEDURES

1. Record the 1kHz signal in the normal recording state.
2. Play the recorded signal back in the normal playback state. Calibrate the harmonic distortion meter to 100% at the INPUT CONT. Adjust the adjusting knob for minimum meter pointer deflection, and read the harmonic distortion.
3. Proceed both for the right and left channels in the same manner.
4. Proceed for the NORMAL, CrO_2 and Fe-Cr positions each in the same manner.

Mode: record



Mode: playback



STANDARDS

1. Less than 2.5% for the NORMAL and CrO_2 positions.
2. Less than 3.5% for the Fe-Cr position.

CAUTIONS

1. Be sure to demagnetize the heads as the measured values may deviate from the accurate values.
2. Note that excessive wow and flutter also causes deviation of the measured values.

18. Record-Playback Signal-to-Noise Ratio Measurement

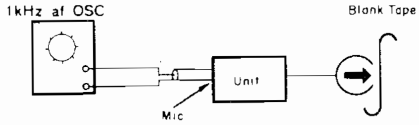
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Input:- 1kHz, –60dB signal.
3. Playback output level:- Same as the recorded signal level.
4. Load:- Measuring instrument input impedance.
5. Measuring output terminal:- LINE OUT.
6. Cassette tape used:- TDK AC-211, AC-511 and SONY CS-30.

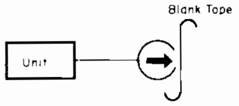
PROCEDURES

1. Record the 1kHz signal in 3dB above the normal recording state.
2. Disconnect the input signal from the microphone jack. In this state, record no signal.
3. Play the 1kHz signal back in the normal playback state with the use of the I.E.C. A-Curve filter. Let the output level be 0dB as reference level.
4. Read difference between the recorded 0dB reference output and no-signal output levels.
5. Proceed both for the right and left channels in the same manner.
6. Set the DOLBY switch to the ON position, and proceed with similar measurement. the use of the high-pass filter.

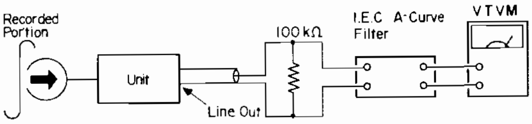
Mode: record



Mode: record



Mode: playback



STANDARDS

1. Greater than 55dB for the ON position of the DOLBY switch.
2. Greater than 50dB for the OFF position of the DOLBY switch.

CAUTION

Arrange the tape deck power cord for minimum hum component.

19. Record-Playback Frequency Response Measurement

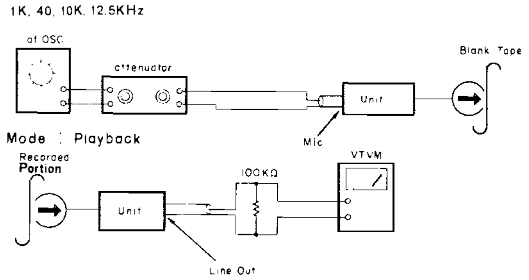
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Input:- 1kHz, –60dB signal with –20dB as OVU.
3. Playback output level:- Same as the recorded signal level.
4. Load:- Measuring instrument input impedance.
5. Measuring output terminal:- LINE OUT.
6. Cassette tape used:- TDK AC-211, AC-511 and SONY CS-30.

PROCEDURES

1. Record the 1kHz signal in the normal recording state. In turn, reduce the input level by 20dB with an attenuator. Then, record the 1kHz, 40Hz, 10kHz, 13kHz, 14kHz and 15kHz signals.
2. Play the recorded 1kHz signal back in the normal playback state.
3. Let the 1kHz, –20dB-down signal level be 0dB as reference level. Read difference of the 40Hz, 10kHz, 13kHz, 14kHz and 15kHz signal output levels from the 1kHz signal 0dB reference level.
4. Proceed for the NORMAL, CrO_2 and Fe-Cr positions each in the same manner.
5. Proceed both for the right and left channels in the same manner.

Mode: record



STANDARDS

1. NORMAL position:
   250Hz - 6.3kHz . . . . . . ±2.5dB
   40Hz - 13kHz . . . . . . +2.5, –4dB
   with DOLBY switch at OFF.
2. CrO_2 position:
   250Hz - 6.3kHz . . . . . . ±2.5dB
   40Hz - 14kHz . . . . . . +2.5, –4dB
   with DOLBY switch at OFF.
3. Fe-Cr position:
   250Hz - 6.3kHz . . . . . . ±2.5dB
   40Hz - 15kHz . . . . . . +2.5, –4dB
   with DOLBY switch at OFF.
4. NORMAL, CrO_2 and Fe-Cr positions:
   250Hz - 6.3kHz . . . . . . ±4dB
   40Hz - 10kHz . . . . . . +4, –6dB
   with DOLBY switch at ON.

20. Erasing Effect Measurement

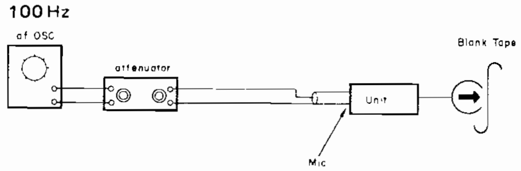
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Input:- 100Hz, –60dB signal with +10dB as 0VU.
3. Playback output level:- Same as the recorded signal level.
4. Load:- Measuring instrument input impedance.
5. TAPE selector switch position:- NORMAL, CrO_2 and Fe-Cr.
6. Cassette tape used:- TDK AC-211, AC-511 and SONY CS-30.
7. Filter used:- 100Hz band-pass filter.

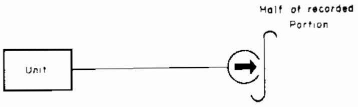
PROCEDURES

1. Record the 100Hz input signal in the normal recording state.
2. In turn, increase the input level by 10dB with the attenuator, and record it.
3. Rewind a half portion of the 10dB-up tape and record in no-signal state, or erase, on the portion with the input signal disconnected from the microphone jack.
4. Play back in the normal playback state the input signal recorded in the normal recording state.
5. In turn, let the 10dB-up recorded signal level be 0dB as reference level. Read difference of the level at the erased portion from the 0dB reference level.

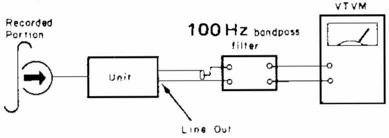
Mode: record



Mode: record



Mode: playback



STANDARD

Greater than 55dB.

21. Leak Bias Measurement

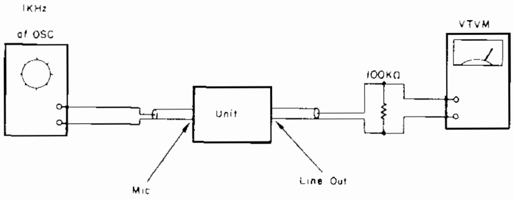
SET UP

1. Power voltage:- 50 or 60Hz AC voltage rated for the unit to be used in a market country.
2. Input:- 1kHz, –60dB signal.
3. Load:- Measuring instrument input impedance.
4. Level control position:- SRL.
5. TAPE selector switch position:- NORMAL, CrO_2 and Fe-Cr.

PROCEDURES

1. Record the 1kHz input signal in the normal recording state. Let the monitor output level at the LINE OUT terminal be 0dB as reference level. Read difference of the output level having the input signal disconnected from the 0dB reference level.
2. Proceed both for the right and left channels in the same manner.

Mode: record



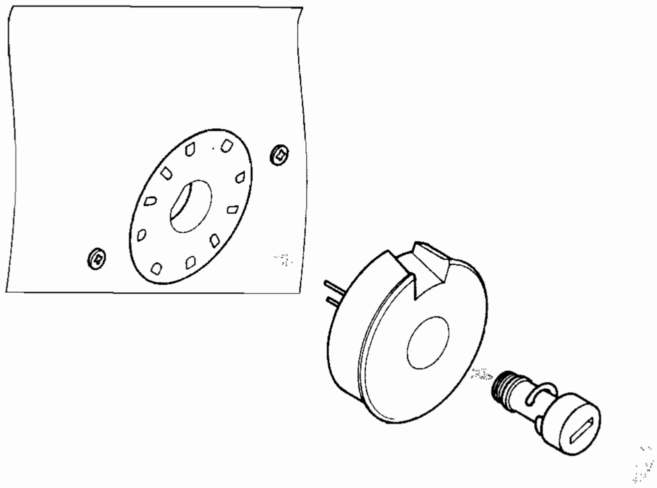
STANDARD

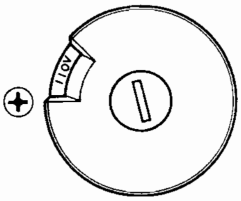
Lower than –45dB.

5. VOLTAGE CONVERSION FOR EUROPEAN MODEL

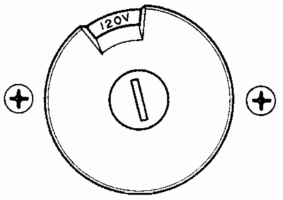
The European version of the Model 5010 is equipped with a universal power transformer that may be adjusted to operate at 110 V, 120 V, 220 V, or 240 V AC at 50 to 60 Hz. To convert the unit to a different power source voltage, reposition conversion plug as illustrated in the drawing below.

CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

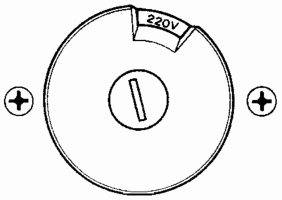




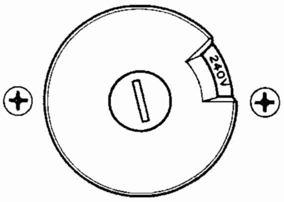
For 110V Operation



For 120V Operation



For 220V Operation

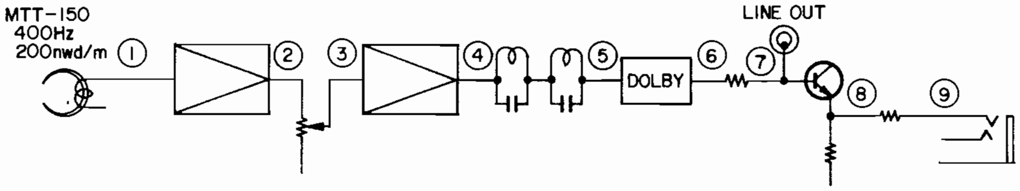


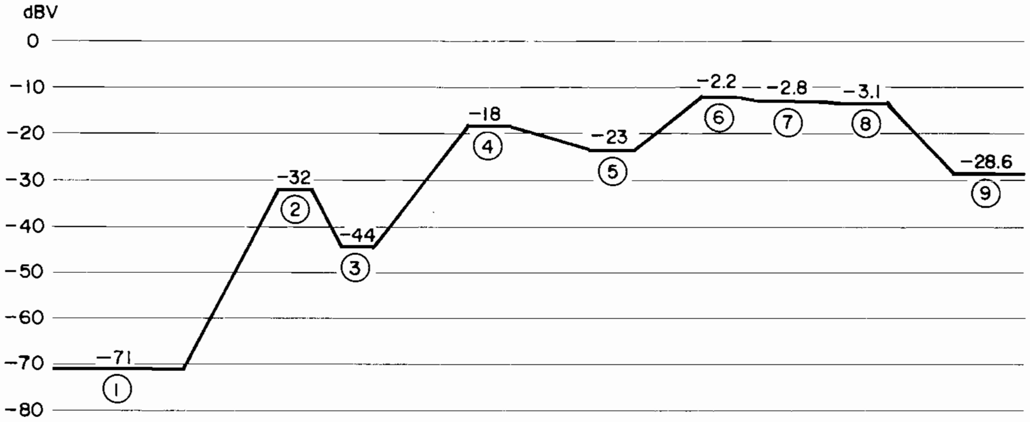
For 240V Operation

6. DIAGRAMS

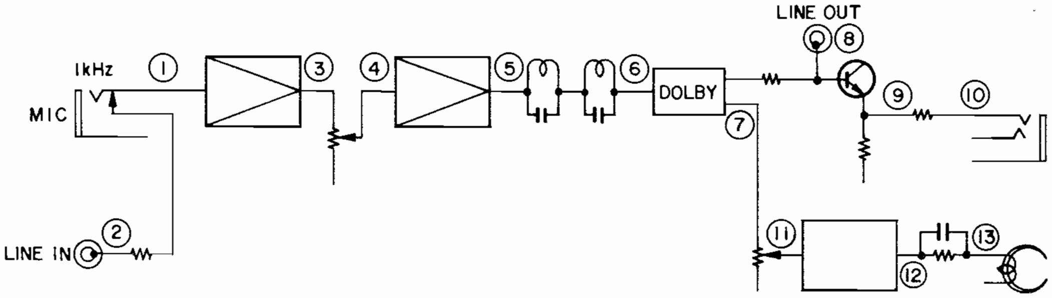
6.1 LEVEL DIAGRAM

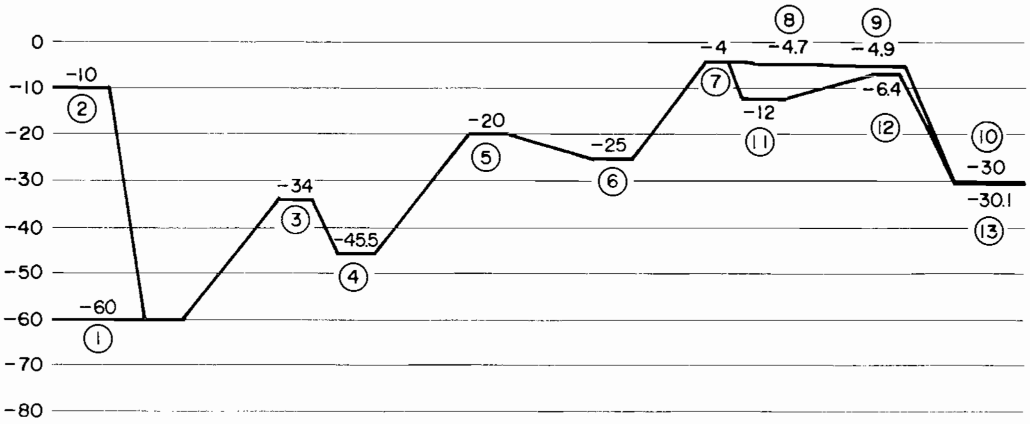
PLAY BACK


MTT-150
400Hz
200nwd/m ①
②
③
④
⑤
DOLBY
⑥
⑦
LINE OUT
⑧
⑨

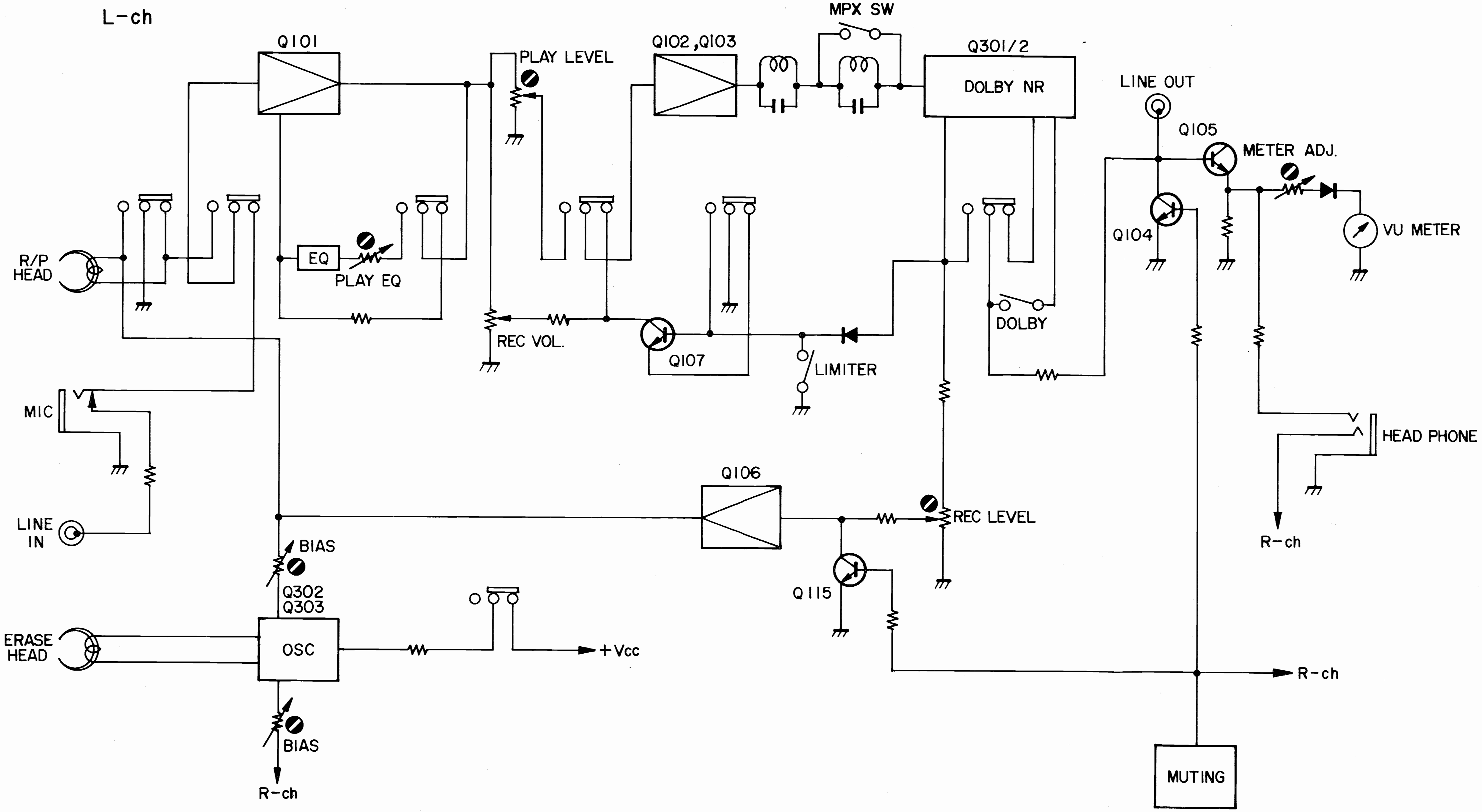


RECORD

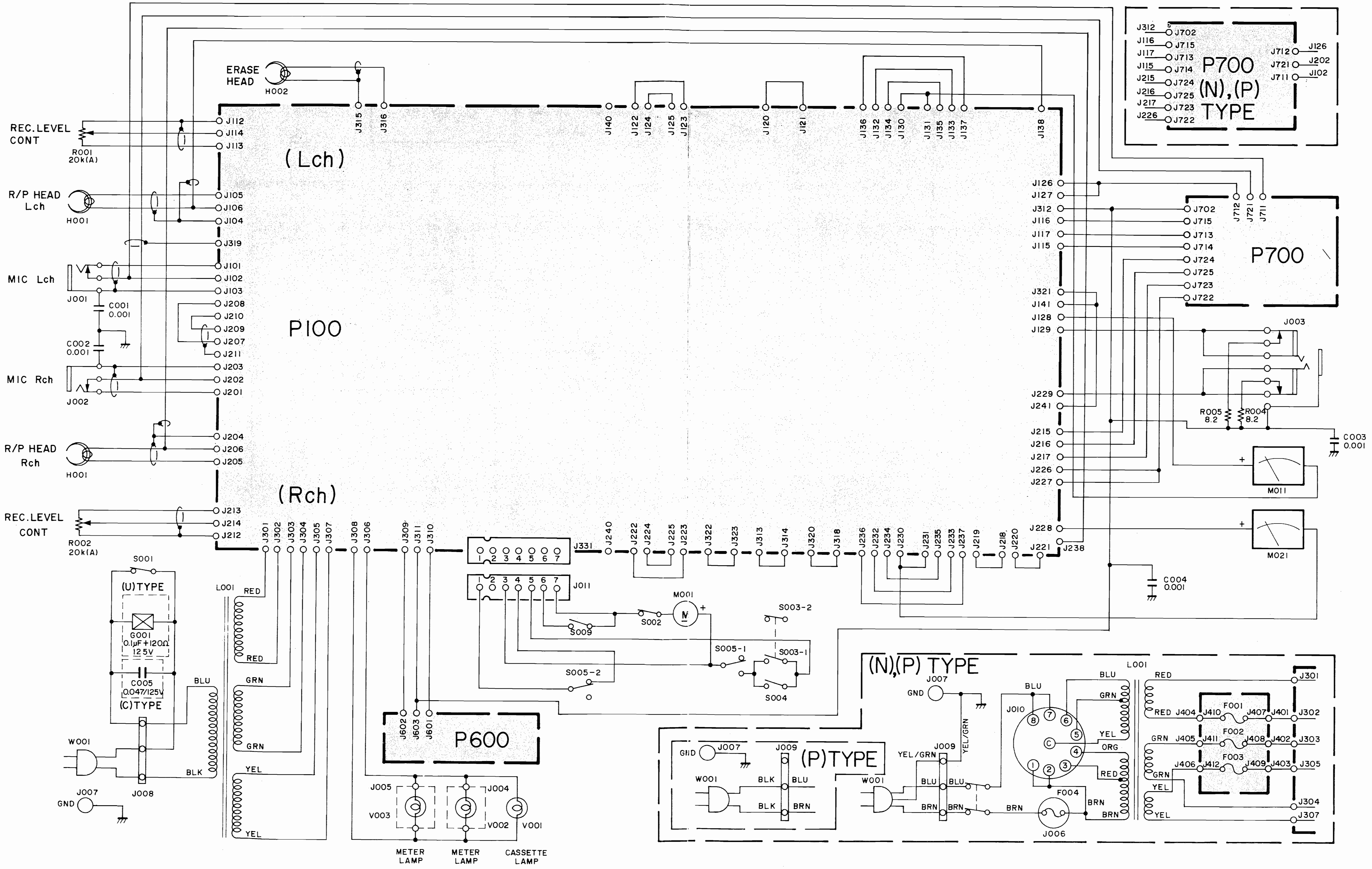

1kHz
MIC
①
LINE IN
②
③
④
⑤
⑥
DOLBY
⑦
LINE OUT
⑧
⑨
⑩
⑪
⑫
⑬



6.2 Block DIAGRAM

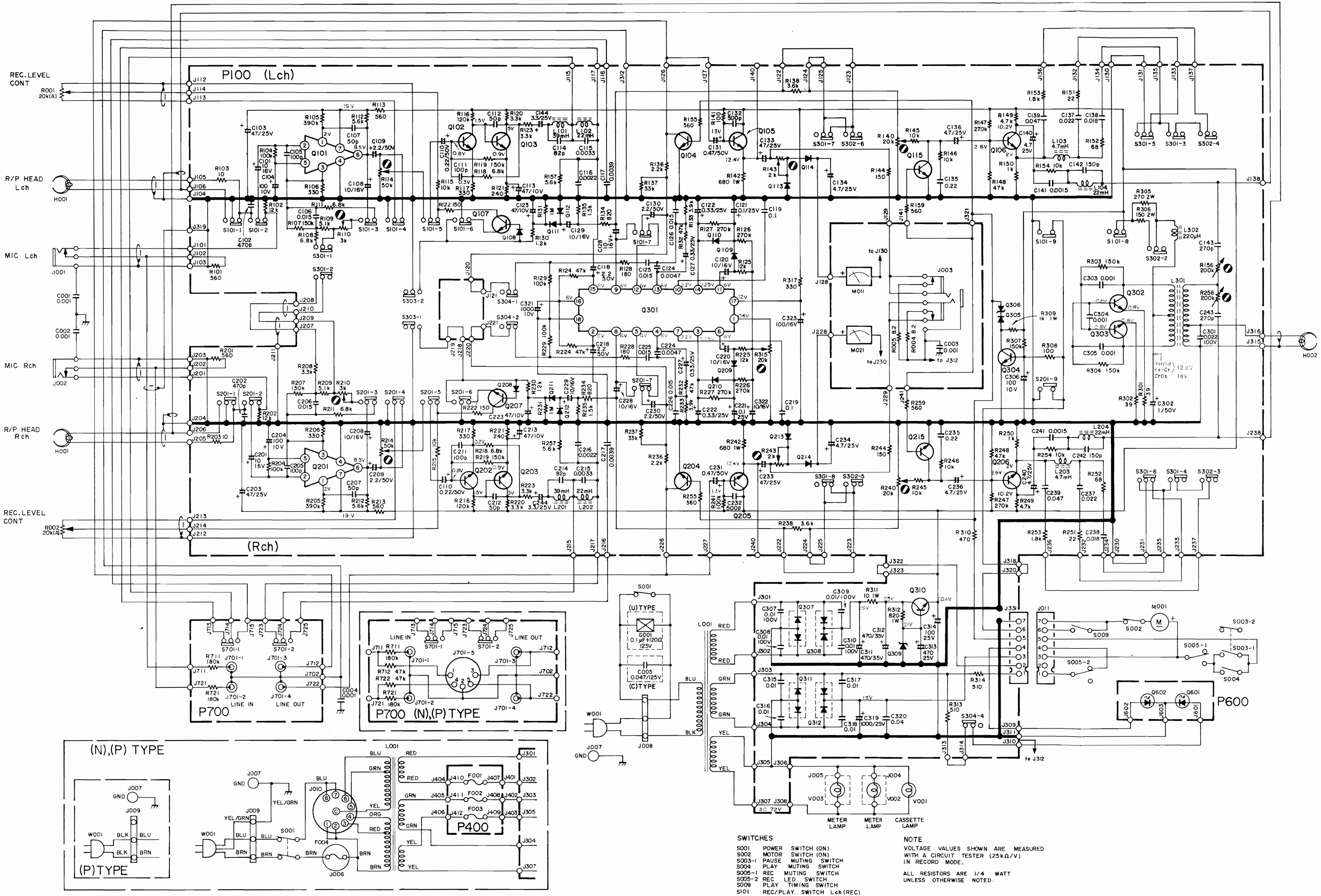

L-ch
Q101
PLAY LEVEL
Q102, Q103
MPX SW
Q301/2
DOLBY NR
LINE OUT
Q105
METER ADJ.
VU METER
Q104
R/P HEAD
EQ
PLAY EQ
REC VOL.
Q107
LIMITER
DOLBY
MIC
HEAD PHONE
LINE IN
Q106
REC LEVEL
BIAS
Q302
Q303
Q115
R-ch
ERASE HEAD
OSC
+Vcc
R-ch
BIAS
R-ch
MUTING

6.3 CONNECTION DIAGRAM


ERASE HEAD
H002
REC.LEVEL CONT
R001 20k(A)
R/P HEAD Lch
H001
MIC Lch
J001
C001 0.001
C002 0.001
MIC Rch
J002
R/P HEAD Rch
H001
REC.LEVEL CONT
R002 20k(A)
(Lch)
P100
(Rch)
J112
J114
J113
J105
J106
J104
J319
J101
J102
J103
J208
J210
J209
J207
J211
J203
J202
J201
J204
J206
J205
J213
J214
J212
J315
J316
J140
J122
J124
J125
J123
J120
J121
J136
J132
J134
J130
J131
J135
J133
J137
J138
J126
J127
J312
J116
J117
J115
J321
J141
J128
J129
J229
J241
J215
J216
J217
J226
J227
J228
J221
J238
J301
J302
J303
J304
J305
J307
J308
J306
J309
J311
J310
J331
J240
J222
J224
J225
J223
J322
J323
J313
J314
J320
J318
J236
J232
J234
J230
J231
J235
J233
J237
J219
J218
J220
J011
1 2 3 4 5 6 7
P700 (N),(P) TYPE
J702
J715
J713
J714
J724
J725
J723
J722
J712
J721
J711
J202
J102
P700
J003
R005 8.2
R004 8.2
C003 0.001
M011
M021
C004 0.001
M001
S002
S009
S003-2
S003-1
S005-1
S005-2
S004
S001
(U)TYPE
G001 0.1μF+120Ω 125V
C005 0.047/125V
(C)TYPE
W001
J008
J007
GND
L001
RED
GRN
YEL
BLU
BLK
P600
J602
J603
J601
J005
J004
V003
V002
V001
METER LAMP
METER LAMP
CASSETTE LAMP
(N),(P) TYPE
J007
GND
J010
J009
YEL/GRN
(P)TYPE
BLU
BRN
ORG
F004
J006
F001
F002
F003
J404
J410
J407
J401
J405
J411
J408
J402
J406
J412
J409
J403
J304
J307

6.4 SCHEMATIC DIAGRAM

Q101,Q201	Q102,Q202 Q103,Q203	Q107,Q207	Q105,Q205,Q106 Q206,Q304	Q301	Q302,Q303	Q108,Q208,Q110,Q210 Q111,Q211,Q305	Q109,Q209,Q112,Q212 Q113,Q213,Q114,Q214	Q306	Q307,Q311	Q308,Q312	Q309	Q310	Q601,Q602	Q104,Q204,Q115,Q215
HC10012060	HT317400S0	HT402272A0	HT309451Q0	HC10026010	HT313181R0	HD20011050	HD10003020	HD30033090	HD20017100	HD20016100	HD30048090	HT403131E0	HI10004030	HT309451P0
μPC1024H	2SC1740LN(S)	2SD227(Q or V)	2SC945(Q)	HA11226	2SC1318(R)	IS1555	20A90	WZ-052	10DC1R	10DC1N	WZ-210	2SD313(E)	SLP132B	2SC945(P)


P100 (Lch)
(Rch)
REC.LEVEL CONT
R001 20k(A)
R002 20k(A)
R/P HEAD Lch
R/P HEAD Rch
H001
MIC Lch
MIC Rch
J001
J002
Q101
Q201
Q301
ERASE HEAD
H002
M011
M021
J003
P700
P700 (N),(P) TYPE
LINE IN
LINE OUT
S701-1
S701-2
(N),(P) TYPE
(P) TYPE
(U) TYPE
(C) TYPE
S001
W001
J007
GND
P400
P600
M001
L001
RED
BLU
GRN
YEL
BLK
BRN
ORG
METER LAMP
METER LAMP
CASSETTE LAMP
V001
V002
V003
J005
J004
J307 J308
AC 72V
to J312

SWITCHES

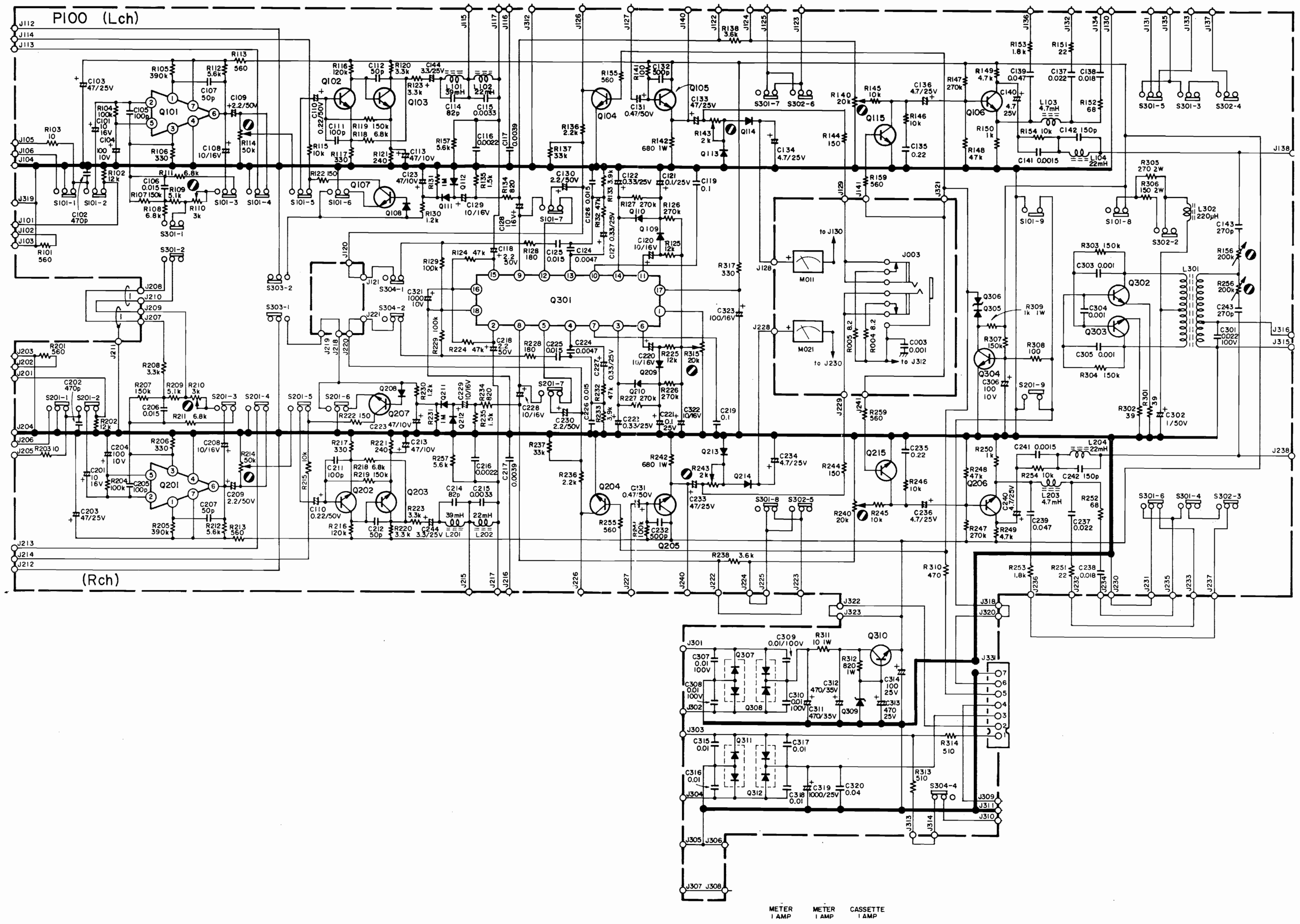
S001 POWER SWITCH (ON)
S002 MOTOR SWITCH (ON)
S003-1 PAUSE MUTING SWITCH
S004 PLAY MUTING SWITCH
S005-1 REC MUTING SWITCH
S005-2 REC LED SWITCH
S009 PLAY TIMING SWITCH
S101 REC/PLAY SWITCH Lch (REC)
S201 REC/PLAY SWITCH Rch (REC)
S301 EQ. SWITCH (NORMAL)
S302 BIAS SWITCH (NORMAL)
S303 LIMITER SWITCH (ON)
S304 DOLBY NR SWITCH (ON)
S701 MPX FILTER SWITCH (OFF)

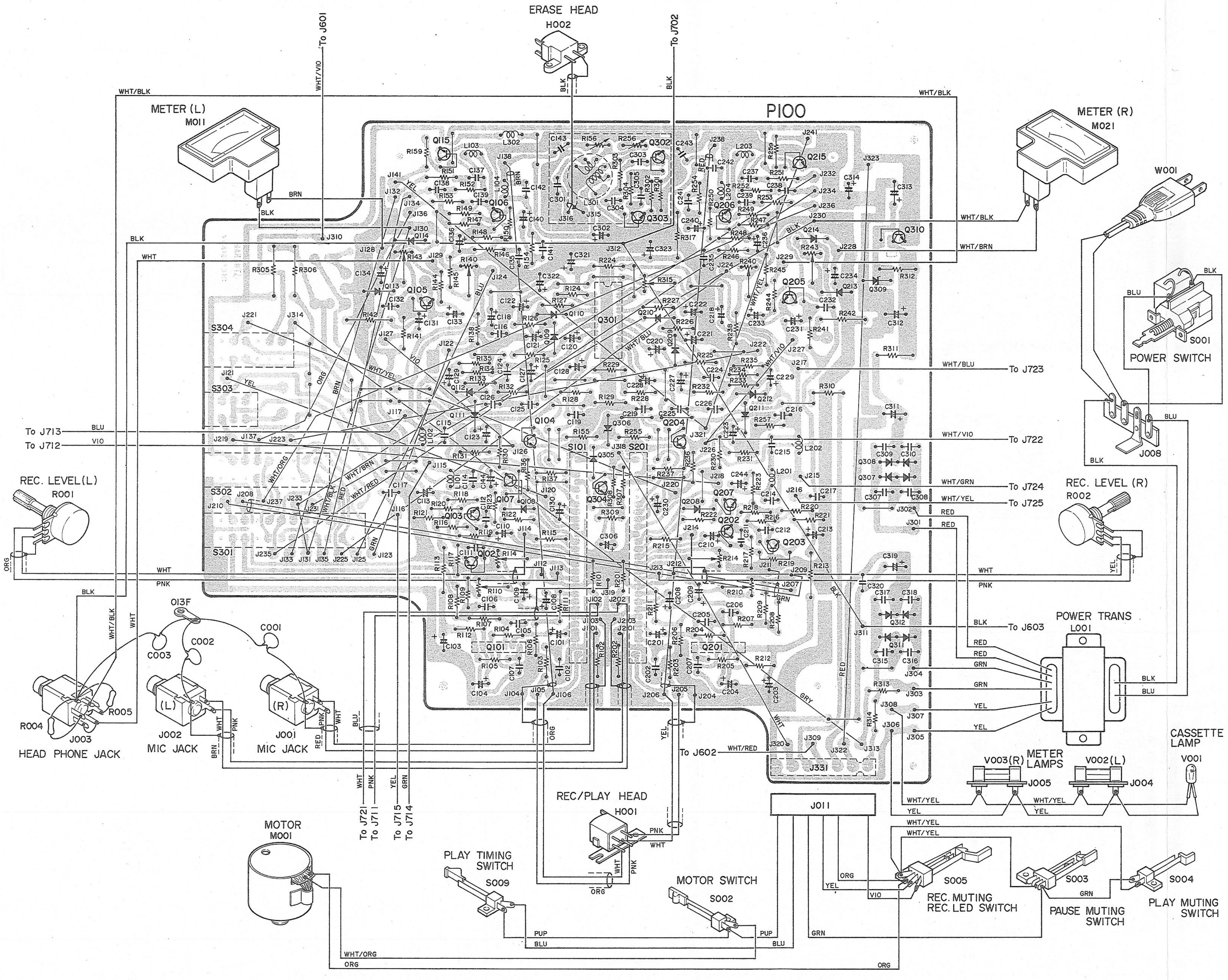
NOTE

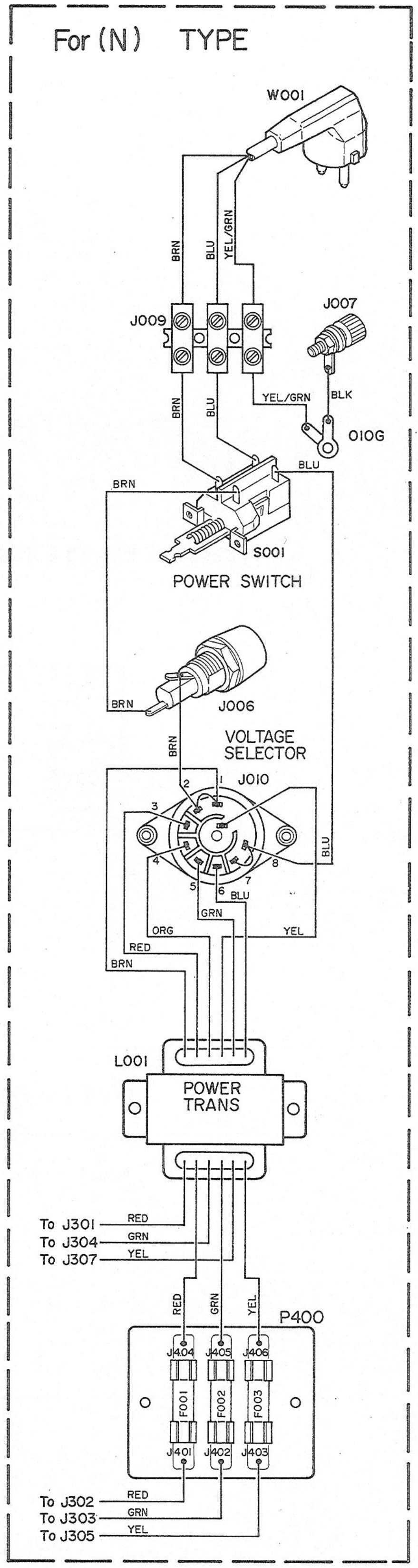
VOLTAGE VALUES SHOWN ARE MEASURED WITH A CIRCUIT TESTER (25kΩ/V) IN RECORD MODE.

ALL RESISTORS ARE 1/4 WATT UNLESS OTHERWISE NOTED.

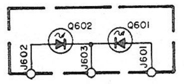
6.5 PRE-AMP, POWER SUPPLY, DOLBY BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P100

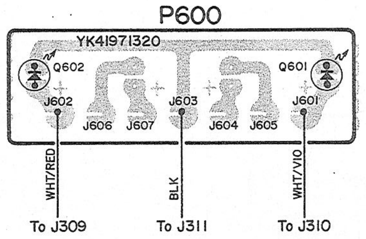

P100 (Lch)
(Rch)
Q101
Q102
Q103
Q104
Q105
Q106
Q107
Q201
Q202
Q203
Q204
Q205
Q206
Q207
Q301
Q302
Q303
Q304
Q310
M011
M021
J003
L301
METER I AMP
METER I AMP
CASSETTE I AMP


ERASE HEAD
H002
To J601
To J702
WHT/VIO
WHT/BLK
BLK
METER (L)
M011
METER (R)
M021
P100
W001
WHT/BLK
WHT/BRN
POWER SWITCH
S001
J008
To J723
To J722
To J724
To J725
To J603
POWER TRANS
L001
REC. LEVEL (L)
R001
REC. LEVEL (R)
R002
To J713
To J712
S301
S302
S303
S304
013F
C001
C002
C003
R004
R005
J003
HEAD PHONE JACK
(L)
J002
MIC JACK
(R)
J001
MIC JACK
To J721
To J711
To J715
To J714
To J602
J331
REC/PLAY HEAD
H001
MOTOR
M001
PLAY TIMING
SWITCH
S009
MOTOR SWITCH
S002
J011
S005
REC. MUTING
REC. LED SWITCH
S003
PAUSE MUTING
SWITCH
S004
PLAY MUTING
SWITCH
V003(R)
METER
LAMPS
V002(L)
J005
J004
CASSETTE
LAMP
V001
WHT/YEL
WHT/RED
WHT/ORG
ORG
PUP
BLU
GRN
RED
YEL
PNK
WHT
BRN

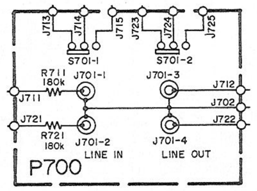

For (N) TYPE
W001
BRN
BLU
YEL/GRN
J009
J007
YEL/GRN
BLK
010G
S001
POWER SWITCH
J006
VOLTAGE
SELECTOR
J010
L001
POWER
TRANS
To J301
To J304
To J307
RED
GRN
YEL
P400
J404
J405
J406
F001
F002
F003
J401
J402
J403
To J302
To J303
To J305

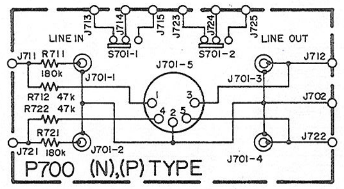
6.6 LED BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P600

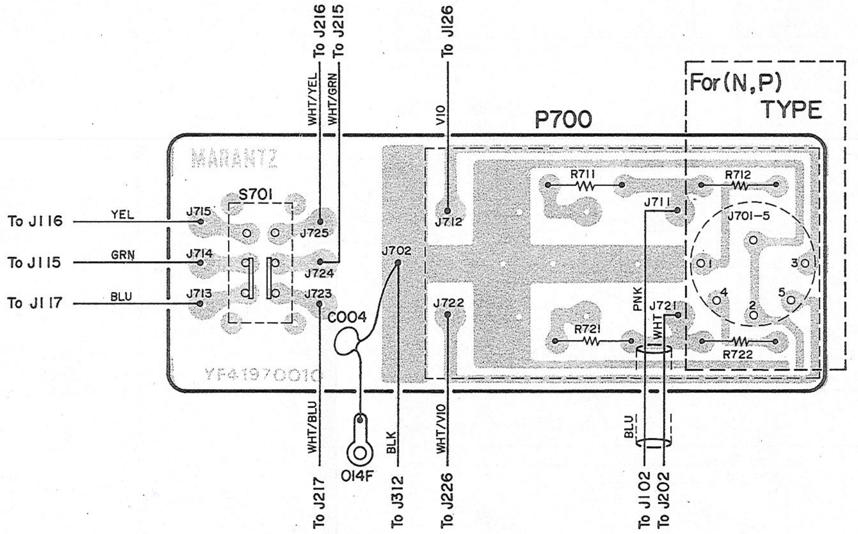

Q602
Q601
J602
J603
J601


P600
YK41971320
Q602
Q601
J602
J603
J601
J606
J607
J604
J605
WHT/RED
BLK
WHT/VIO
To J309
To J311
To J310

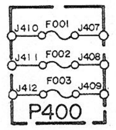
6.7 TERMINALS BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P700

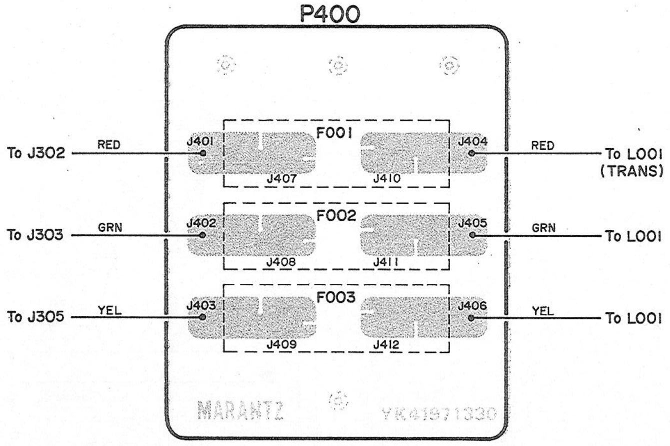

J713
J714
J715
J723
J724
J725
S701-1
S701-2
R711
180k
J701-1
J701-3
J711
J712
J702
J721
J722
R721
180k
J701-2
J701-4
LINE IN
LINE OUT
P700


J713
J714
J715
J723
J724
J725
LINE IN
LINE OUT
S701-1
S701-2
J711
R711
180k
J701-1
J701-5
J701-3
J712
R712 47k
R722 47k
J702
R721
J721
180k
J701-2
J701-4
J722
1
2
3
4
5
P700 (N),(P) TYPE


To J216
To J215
WHT/YEL
WHT/GRN
To J126
VIO
P700
For (N,P) TYPE
MARANTZ
S701
To J116
YEL
J715
To J115
GRN
J714
To J117
BLU
J713
J725
J724
J723
C004
J702
J712
J722
R711
R712
J711
J701-5
1
3
4
5
2
PNK
J721
WHT
R721
R722
YF41970010
WHT/BLU
014F
BLK
WHT/VIO
BLU
To J217
To J312
To J226
To J102
To J202

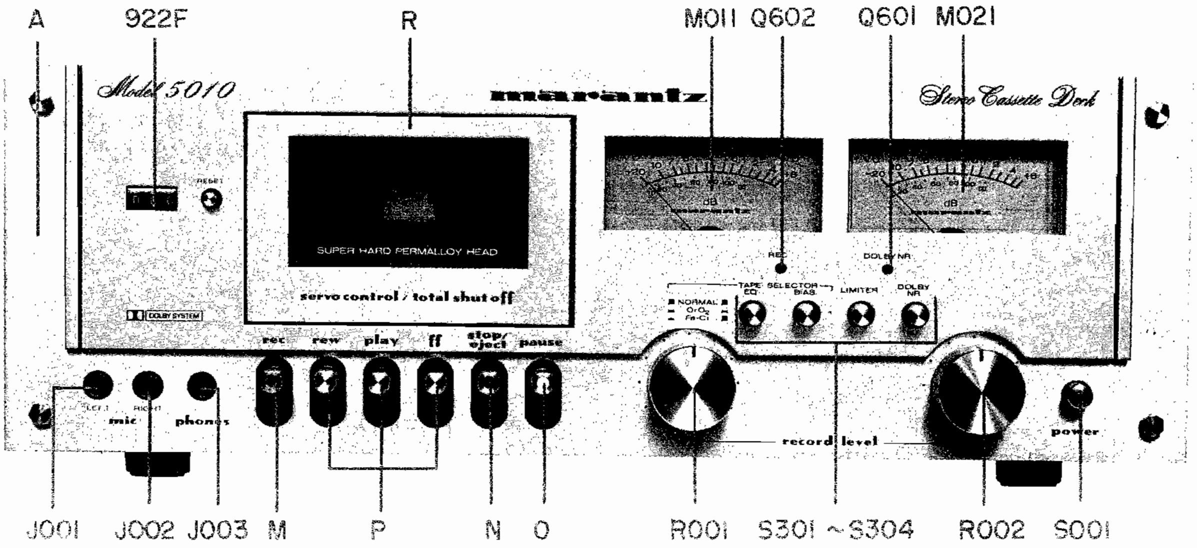
6.8 FUSE BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P400 - EUROPE

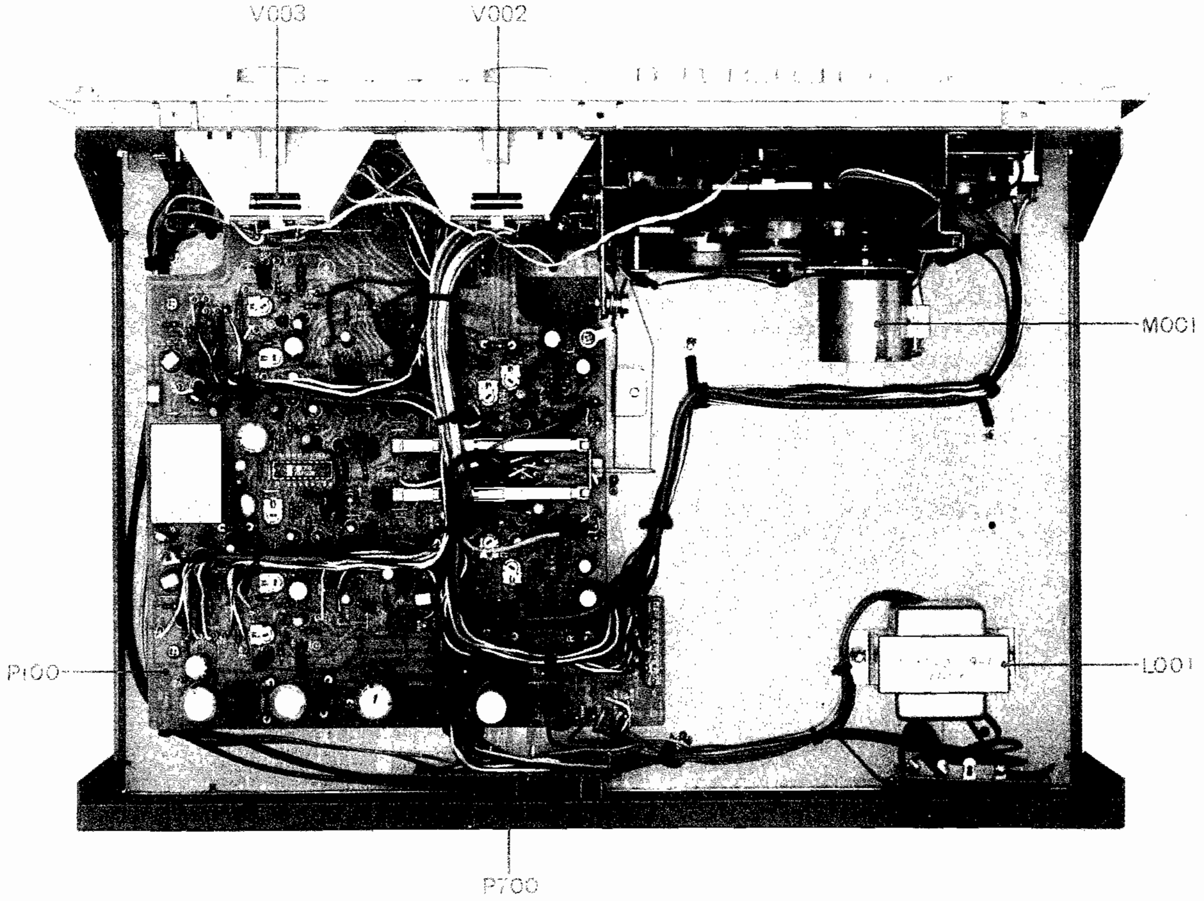

J410
F001
J407
J411
F002
J408
J412
F003
J409
P400


P400
To J302
RED
J401
F001
J404
RED
To L001 (TRANS)
J407
J410
To J303
GRN
J402
F002
J405
GRN
To L001
J408
J411
To J305
YEL
J403
F003
J406
YEL
To L001
J409
J412
MARANTZ
YK41971330

7. MAJOR COMPONENT LOCATIONS

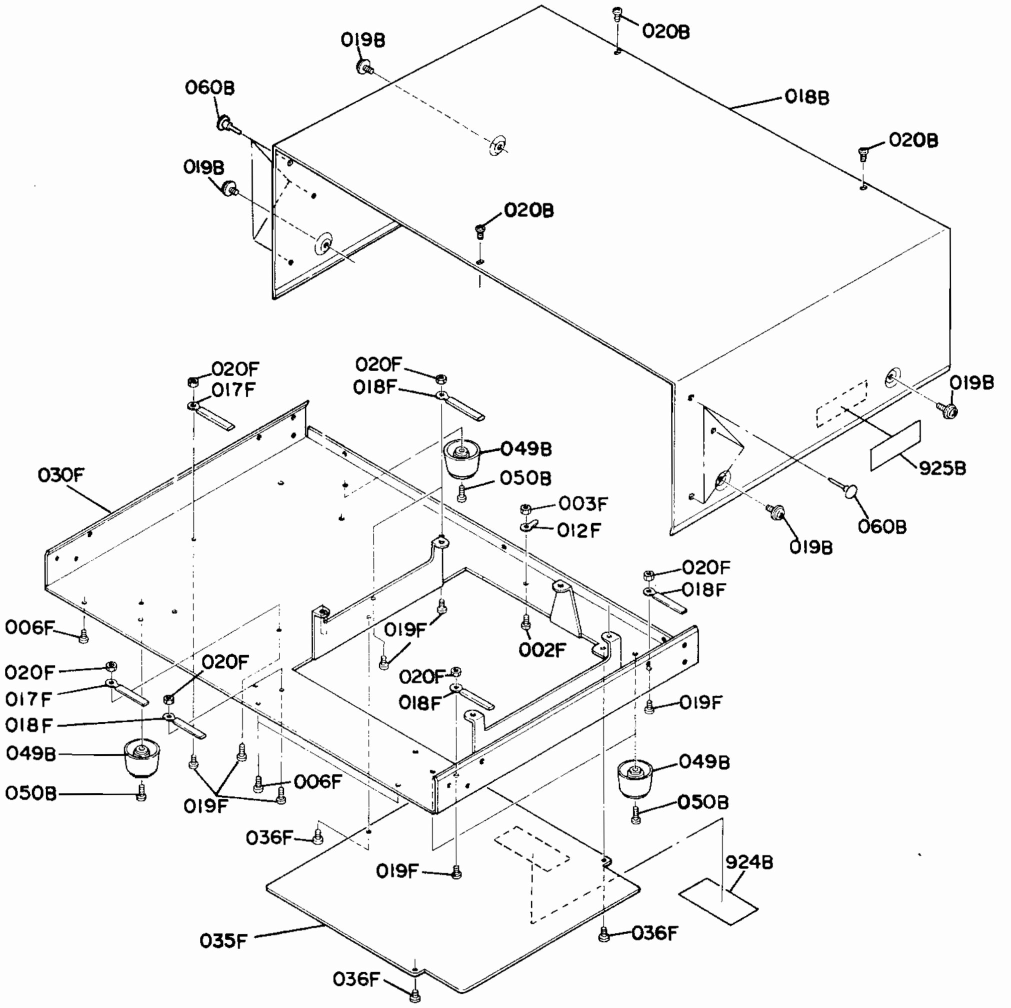
7.1 CABINET - FRONT VIEW


A
922F
R
M011
Q602
Q601
M021
Model 5010
marantz
Stereo Cassette Deck
SUPER HARD PERMALLOY HEAD
servo control / total shut off
rec
rew
play
ff
stop/eject
pause
REC
DOLBY NR
TAPE SELECTOR EQ BIAS
LIMITER
DOLBY NR
mic
phones
record level
power
J001
J002
J003
M
P
N
O
R001
S301 ~ S304
R002
S001


V003
V002
M001
P100
L001
P700

8. EXPLODED VIEWS AND PARTS LIST

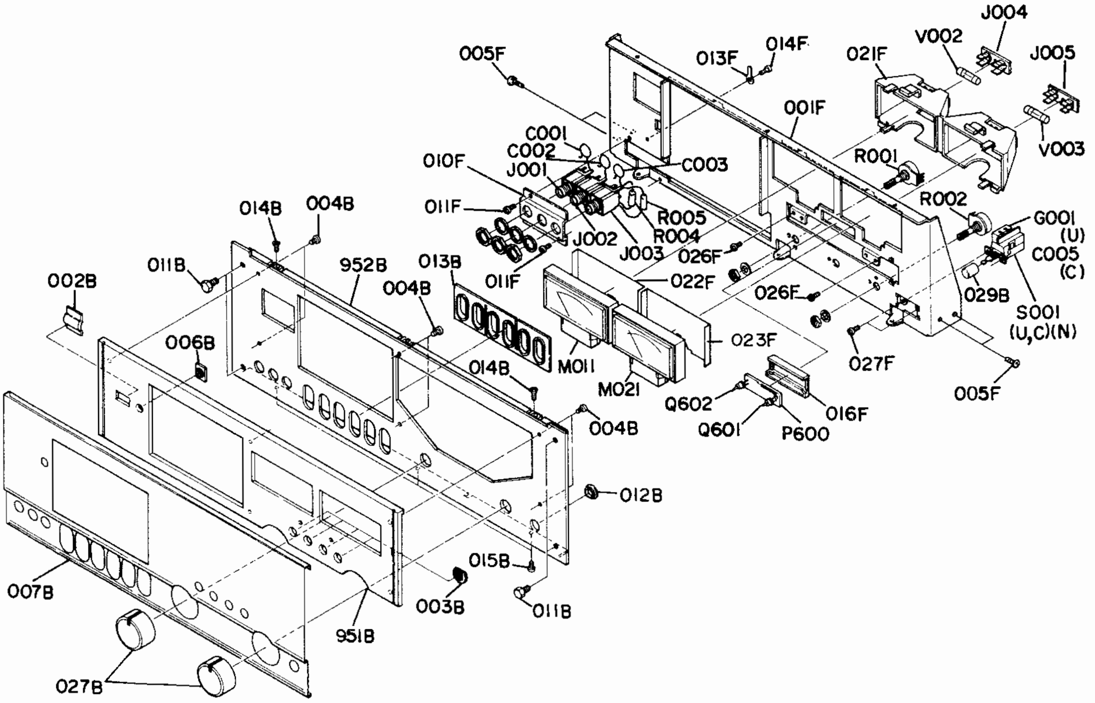
8.1 [P01-00] TOP COVER AND MAIN CHASSIS


020B
019B
018B
060B
020B
019B
020B
020F
017F
020F
018F
019B
049B
030F
050B
003F
012F
925B
060B
019B
020F
018F
006F
019F
002F
020F
020F
017F
018F
020F
018F
019F
049B
049B
050B
006F
050B
019F
036F
924B
019F
035F
036F
036F

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
018B	1	1	1	4197257022	Lid, Top. Cover
019B	4	4	4	51480406S9	F. Washer Screw
020B	3	3	3	51100306S9	B.H.M. Screw B3 x 6
049B	4	4	4	2932057010	Leg
050B	4	4	4	51570410S0	P. TAPT. Screw P4 x 6
060B	6	6	6	4197259020	Bushing
924B	1		1	3889861010	Label
924B		1		4113861020	Label
925B	1		1	2932861010	Label
925B		1		2911861142	Label

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
002F	1	1	1	51100306A9	B.H.M. Screw B3 x 6
003F	1	1	1	53110303A9	Hexagon Nut
006F	3	3	3	51100306A9	B.H.M. Screw B3 x 6
012F	1	1	1	62030049W0	Lug
017F	2	2	2	2871005010	Clamper
018F	5	5	5	1382005030	Clamper
019F	7	7	7	51100306A9	B.H.M. Screw B3 x 6
020F	7	7	7	53110303A9	Hexagon Nut
030F	1	1	1	4197105504	Chassis
035F	1	1	1	4197257030	Lid
036F	3	3	3	51100306A9	B.H.M. Screw B3 x 6

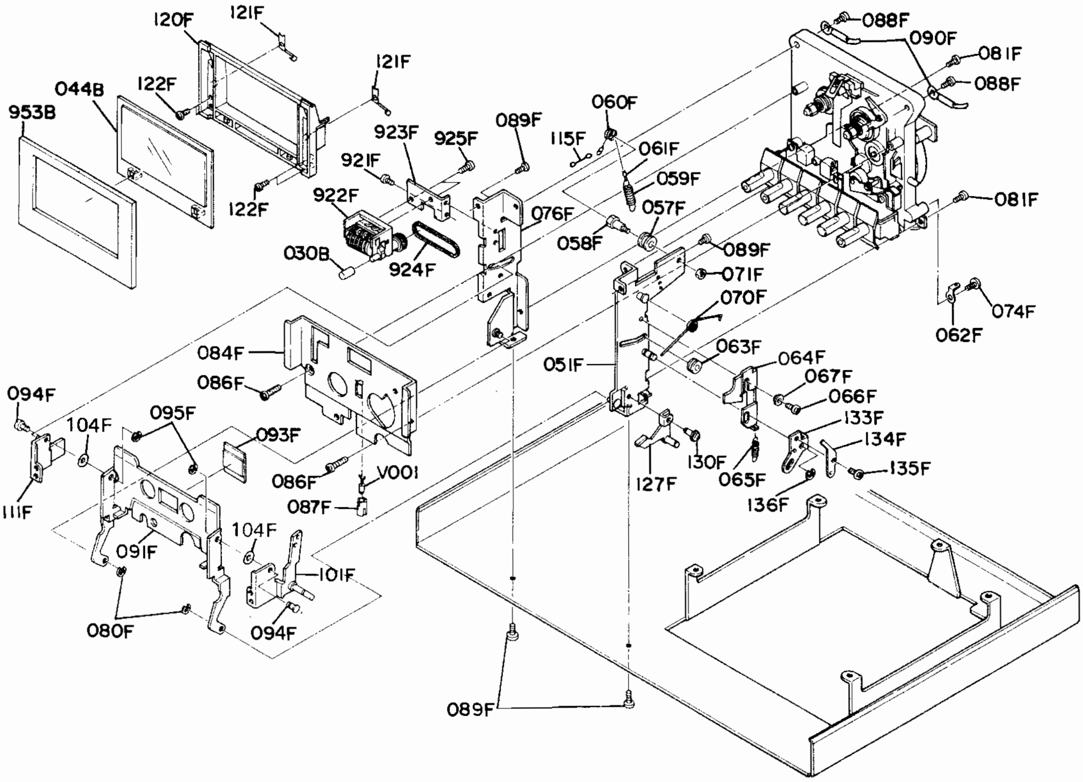
8.2 [P02-99] FRONT PANEL AND CHASSIS


J004
V002
014F
013F
021F
J005
005F
001F
C001
C002
V003
010F
J001
C003
R001
014B
004B
011F
R005
R002
G001
(U)
011B
952B
013B
J002
R004
J003
026F
C005
(C)
002B
004B
011F
022F
026F
029B
S001
(U,C)(N)
006B
023F
027F
014B
M011
M021
005F
Q602
016F
004B
Q601
P600
012B
015B
007B
003B
011B
951B
027B

REF. DESIG.	Q'TY U	C	N	PART NO.	DESCRIPTION
A	1	1	1	4197063400	Front Panel Assembly
951B	1	1	1	4197063013	Escutcheon
002B	1	1	1	4123158032	Window
003B	4	4	4	3448259010	Bushing
004B	6	6	6	51100305A9	B.H.M. Screw B3 x 5
006B	1	1	1	3448259100	Bushing
007B	1	1	1	4197053022	Cover
952B	1	1	1	4197063022	Escutcheon
012B	1	1	1	2221259013	Bushing
013B	1	1	1	4197259010	Bushing
011B	4	4	4	52017069J0	H. Head Bolt
014B	2	2	2	51040306A9	F.H.M. Screw F3 x 6
015B	3	3	3	51100306A9	B.H.M. Screw B3 x 6
027B	2	2	2	4197154010	Knob, Rec Level
029B	1	1	1	2963154022	Knob, Power SW.
001F	1	1	1	4197160013	Bracket
005F	4	4	4	41280306B0	B.H. TAP. Screw P3 x 6
010F	1	1	1	4197160060	Bracket
011F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
013F	1	1	1	62030049W0	Lug, GND
014F	1	1	1	51100306A9	B.H.M. Screw B3 x 6
016F	1	1	1	4197271020	Holder
021F	1	1	1	4197274012	Reflector
022F	1	1	1	4197107010	Sheet
023F	1	1	1	4197107010	Sheet
026F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
027F	2	2	2	51100306A9	B.H.M. Screw B3 x 6

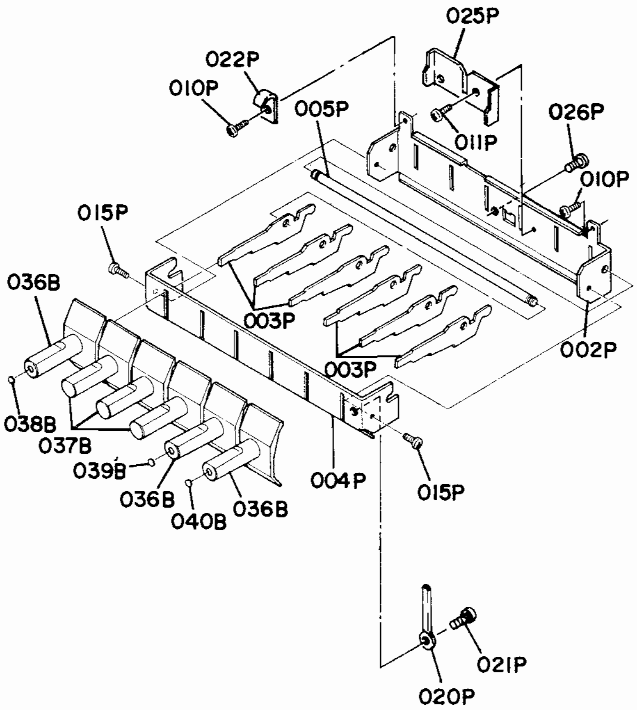
REF. DESIG.	Q'TY U	C	N	PART NO.	DESCRIPTION
C001	1	1	1	DK18102010	Ceramic Cap. 1000 pF
C002	1	1	1	DK18102010	Ceramic Cap. 1000 pF
C003	1	1	1	DK18102010	Ceramic Cap. 1000 pF
C005		1		DF17473590	Film Cap.
G001	1			BF10400040	Cap. Comp.
J001	1	1	1	YJ01001110	Jack, Mic
J002	1	1	1	YJ01001110	Jack, Mic
J003	1	1	1	YJ01001120	Jack, Headphone
J004	1	1	1	YJ08000130	Jack, Lamp Holder
J005	1	1	1	YJ08000130	Jack, Lamp Holder
R001	1	1	1	RK02030460	Variable Resist
R002	1	1	1	RK02030460	Variable Resist
R004	1	1	1	GD05082140	Resistor, 8.2Ω ±5% 0.25W
R005	1	1	1	GD05082140	Resistor, 8.2Ω ±5% 0.25W
V002	1	1	1	IN10080070	Lamp, Meter
V003	1	1	1	IN10080070	Lamp, Meter
S001	1	1		SP01010210	Push Switch, Power
S001			1	SP02010300	Push Switch, Power
M011	1	1	1	IM11080040	D.C. Meter
M021	1	1	1	IM11080040	D.C. Meter
					P600-LED CIRCUIT BOARD
P600	1	1	1	YK41971320	P.W. Board, Led
	1	1	1	ZZ41971320	P.W. Board Assembly
Q601	1	1	1	HI10004030	L.E.D.
Q602	1	1	1	HI10004030	L.E.D.
J601	1	1	1	YP10001200	Plug
J602	1	1	1	YP10001200	Plug
J603	1	1	1	YP10001200	Plug

8.3 [P03-99] ASSOCIATED MECHANISM FOR CASSETTE TAPE OPERATION


120F
121F
121F
044B
122F
953B
122F
923F
925F
921F
922F
924F
030B
089F
115F
060F
061F
059F
076F
057F
058F
088F
090F
081F
088F
081F
089F
071F
070F
074F
062F
063F
064F
067F
066F
133F
134F
135F
051F
084F
086F
094F
104F
095F
093F
086F
V001
087F
111F
091F
104F
101F
080F
094F
127F
130F
065F
136F
089F

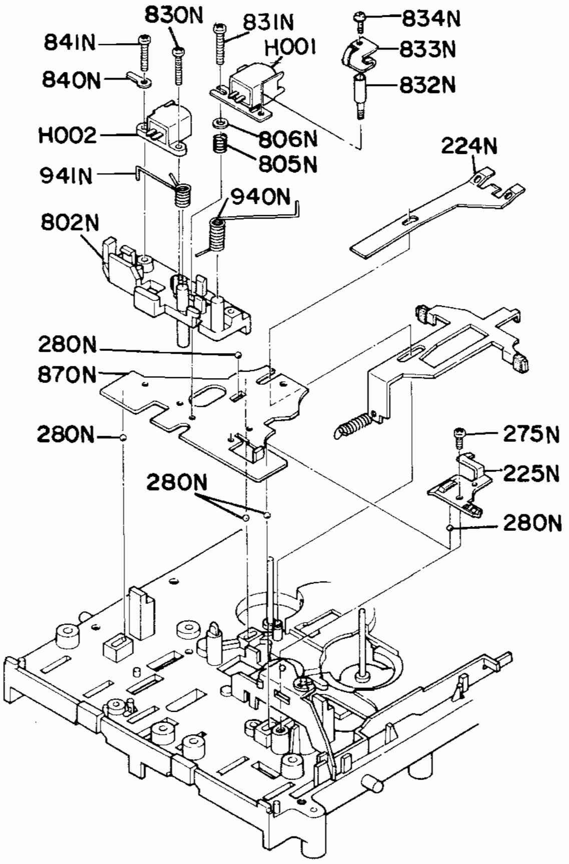
REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R	1	1	1	4197063410	Escutcheon Assembly, Cassette
044B	1	1	1	4197257013	Lid
953B	1	1	1	4197063032	Escutcheon
Q	1	1	1	4197271400	Holder Assembly, Cassette
120F	1	1	1	4197271012	Holder
121F	2	2	2	4197115052	Spring
122F	4	4	4	51062605S0	P.H.M. Screw P2.6 x 5
030B	1	1	1	3448067060	Cap
051F	1	1	1	4197160502	Bracket
057F	1	1	1	4197262010	Pulley
058F	1	1	1	4197112040	Shaft
059F	1	1	1	4197115020	Spring
060F	1	1	1	72081604A0	String
061F	1	1	1	56382540G0	Eyelet
062F	1	1	1	62031650W0	Lug
063F	1	1	1	4197262020	Pulley
064F	1	1	1	4197258020	Hook
065F	1	1	1	4197115040	Spring
066F	1	1	1	51062605A0	P.H.M. Screw P2.6 x 5
067F	1	1	1	4197055010	Collar
070F	1	1	1	4197115030	Spring
071F	1	1	1	53110303A9	Hexagon Nut
074F	1	1	1	51382606U0	P.H. TAP. Screw P2.6 x 6
076F	1	1	1	4197160512	Bracket
080F	2	2	2	64000200R0	RG Ring, E Type
081F	2	2	2	51060306A9	P.H.M. Screw P3 x 6
084F	1	1	1	4197053012	Cover
086F	2	2	2	51382606T0	P.H. TAP. Screw P2.6 x 6
087F	1	1	1	4197271030	Holder
088F	2	2	2	51100308A9	B.H.M. Screw B3 x 8
089F	4	4	4	51100306A9	B.H.M. Screw B3 x 6
090F	2	2	2	1382005030	Clamper
091F	1	1	1	4197104012	Retainer
093F	1	1	1	4197158010	Window
094F	2	2	2	4197112092	Shaft
095F	2	2	2	64000200R0	RG Ring, E Type
104F	2	2	2	59035402G9	Washer
101F	1	1	1	4197051502	Guide
111F	1	1	1	4197051510	Guide
115F	1	1	1	4197258030	Hook
127F	1	1	1	4197002500	Arm
130F	1	1	1	4367112150	Shaft
133F	1	1	1	4197002020	Arm
134F	1	1	1	4197164010	Adjuster
135F	1	1	1	51102604A0	B.H.M. Screw B2.6 x 4
136F	1	1	1	64000300R0	RG, Ring, E Type
921F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
922F	1	1	1	4197052010	Counter
923F	1	1	1	4197160070	Bracket
924F	1	1	1	4197264010	Belt
925F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
V001	1	1	1	1N10080410	Lamp

8.4 [P05-00] BUTTONS FOR TAPE OPERATION


025P
022P
010P
005P
026P
011P
010P
015P
036B
003P
003P
002P
038B
037B
039B
036B
040B
036B
004P
015P
021P
020P

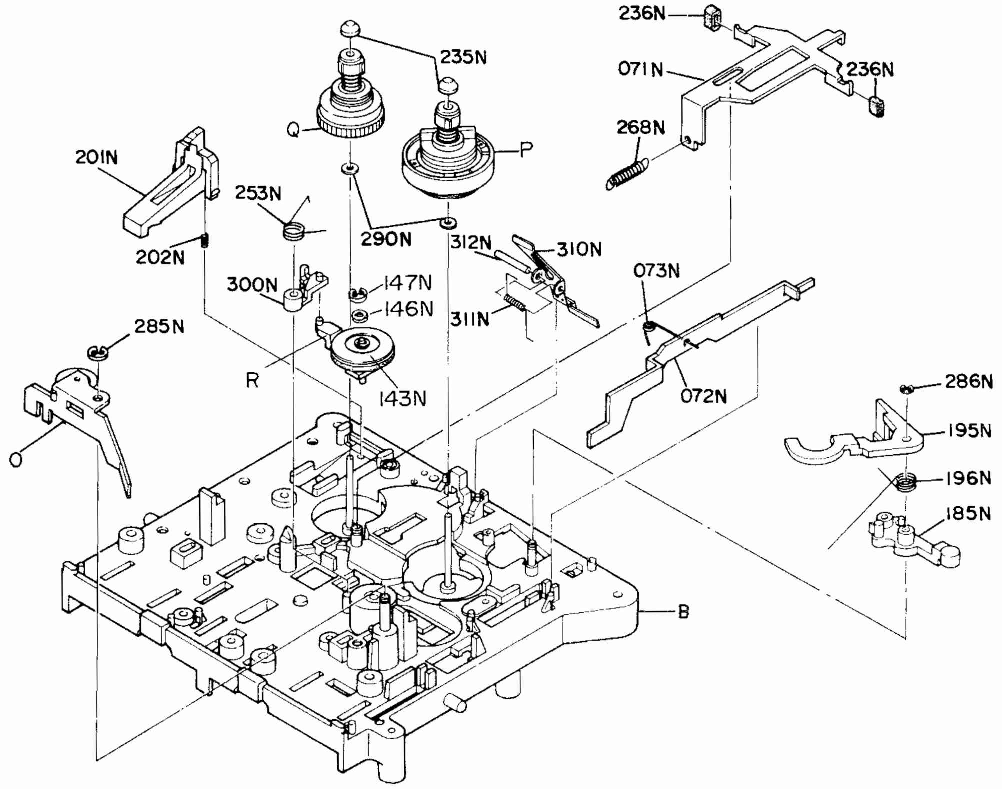
REF. DESIG.	Q'TY U	Q'TY C	Q'TY N	PART NO.	DESCRIPTION
M	1	1	1	4197270400	Button Assembly, Rec.
003P	1	1	1	4380354070	Lever
036B	1	1	1	4197270010	Button
038B	1	1	1	3411108033	Seal
N	1	1	1	4197270410	Button Assembly, Stop
003P	1	1	1	4380354070	Lever
036B	1	1	1	4197270010	Button
039B	1	1	1	3411108023	Seal
O	1	1	1	4197270420	Button Assembly, Pause
003P	1	1	1	4380354070	Lever
036B	1	1	1	4197270010	Button
040B	1	1	1	3411108013	Seal
P	3	3	3	4197270430	Button Assembly, Play, FF, Rew
003P	3	3	3	4380354070	Lever
037B	3	3	3	4197270020	Button
002P	1	1	1	4380160012	Bracket
004P	1	1	1	4380051012	Guide
005P	1	1	1	4380112030	Shaft
010P	3	3	3	51300308B0	P.H. TAP. Screw P3 x 8
015P	2	2	2	51062605A0	P.H.M. Screw P2.6 x 5

8.5 [P06-99] HEAD CHASSIS


830N
831N
834N
841N
H001
833N
840N
832N
H002
806N
805N
224N
941N
940N
802N
280N
870N
280N
275N
225N
280N
280N

REF. DESIG.	Q'TY U	Q'TY C	Q'TY N	PART NO.	DESCRIPTION
224N	1	1	1	4380115010	Spring
225N	1	1	1	4367115172	Spring
275N	1	1	1	51300308B0	P.H. TAP. Screw P3 x 8
280N	5	5	5	61020010T0	Ball
802N	1	1	1	4367160015	Bracket
805N	1	1	1	4380115090	Spring
806N	1	1	1	3444118070	Spacer
830N	1	1	1	51100210A0	B.H.M. Screw B2 x 10
831N	1	1	1	51100210A0	B.H.M. Screw B2 x 10
832N	1	1	1	4380101030	Support
833N	1	1	1	4380005010	Clamper
834N	1	1	1	51100203A0	B.H.M. Screw B2 x 3
840N	1	1	1	62021030W0	Lug
841N	1	1	1	51100212A0	B.H.M. Screw B2 x 12
870N	1	1	1	4367105022	Chassis
940N	1	1	1	4367115042	Spring
941N	1	1	1	4367115052	Spring
H001	1	1	1	LH42851030	Rec./Play Head
H002	1	1	1	LH31000410	Erase Head

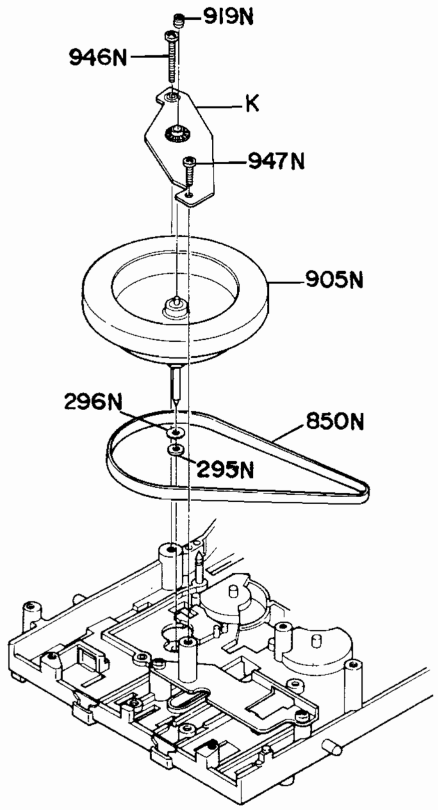
8.6 [P09-99] PARTS ASSEMBLED ON THE TOP OF THE CHASSIS


236N
235N
071N
236N
Q
P
268N
201N
253N
290N
312N
310N
202N
300N
147N
146N
073N
311N
285N
R
143N
286N
072N
195N
O
196N
185N
B

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
B	1	1	1	4380105400	Chassis Assembly
071N	1	1	1	4367354092	Lever
072N	1	1	1	4367354122	Lever
073N	1	1	1	4380115110	Spring
O	1	1	1	4367002400	Arm, Pinch Roller Assembly
P	1	1	1	4367004400	Table Assembly, Take up
Q	1	1	1	4367004410	Table Assembly, Supply
R	1	1	1	4367002410	Arm Assembly
143N	1	1	1	4367001512	Idler
146N	1	1	1	59163202G9	Washer
147N	1	1	1	64001200R0	RG Ring, E Type
185N	1	1	1	4367354410	Lever Assembly
195N	1	1	1	4367002053	Arm
196N	1	1	1	4367115130	Spring

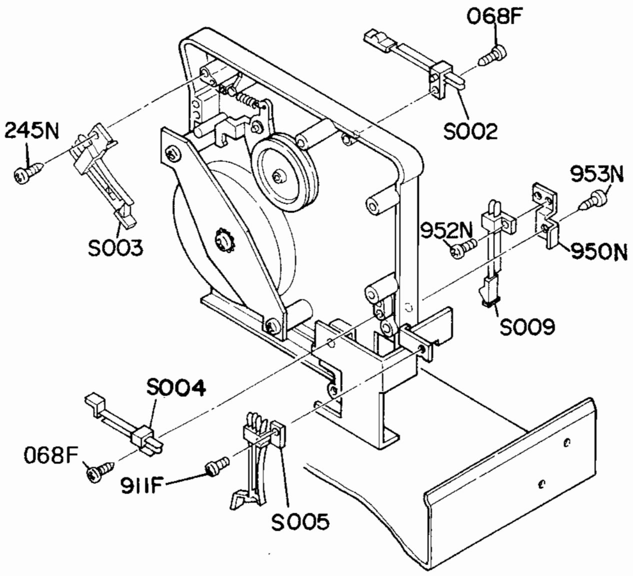
REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
201N	1	1	1	4367354083	Lever
202N	1	1	1	4380115060	Spring
235N	2	2	2	4367067010	Cap
236N	2	2	2	4367263010	Brake
253N	1	1	1	4367115100	Spring
268N	1	1	1	4367115210	Spring
285N	1	1	1	64002500R0	RG Ring, E Type
286N	1	1	1	64001500R0	RG Ring, E Type
290N	2	2	2	59020402G9	Washer
300N	1	1	1	4367354110	Lever
310N	1	1	1	4383115010	Spring
311N	1	1	1	4380115032	Spring
312N	1	1	1	4380112010	Shaft

8.7 [P07-99] FLYWHEEL



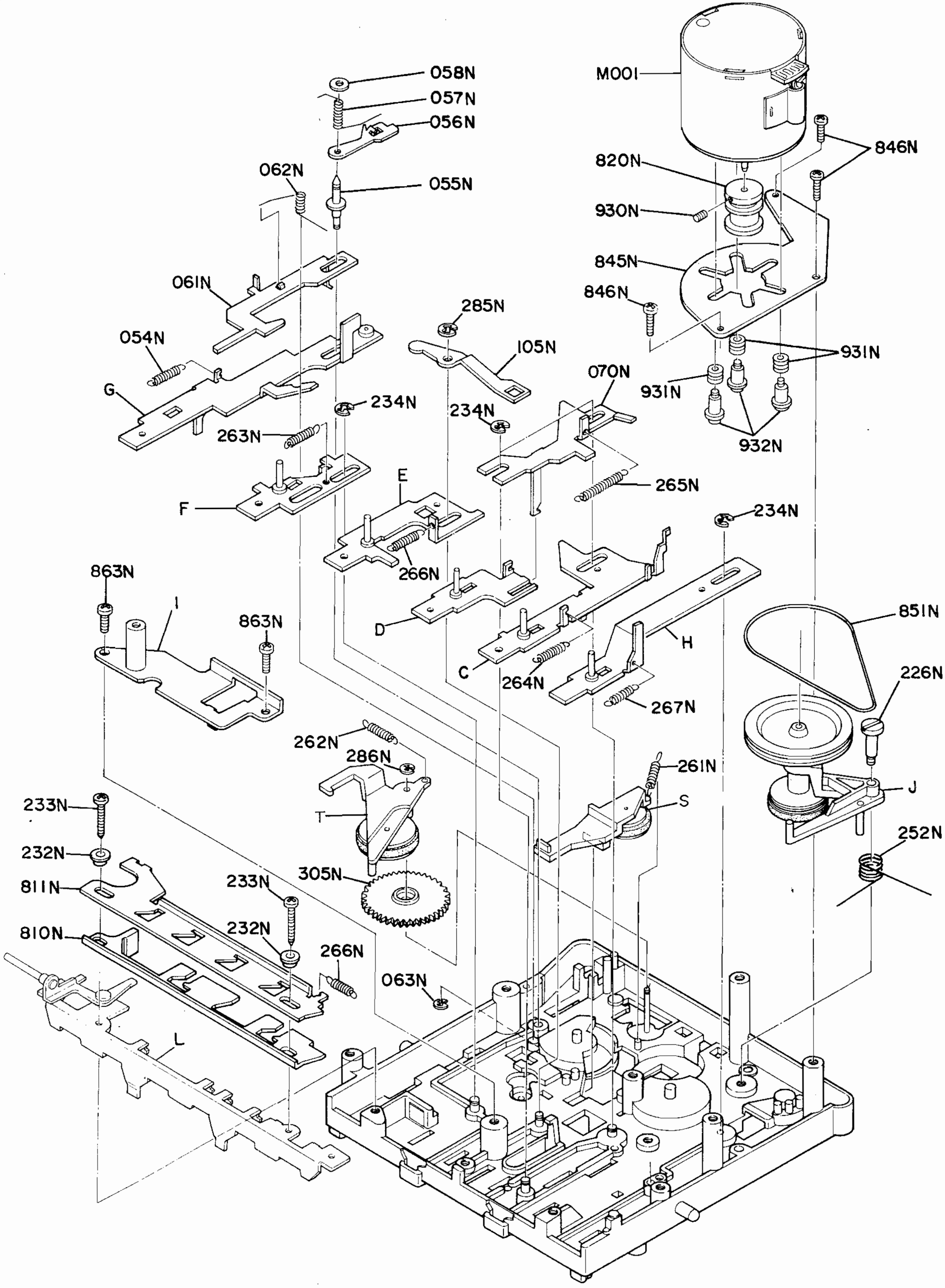
REF. DESIG.	Q'TY U	Q'TY C	Q'TY N	PART NO.	DESCRIPTION
K	1	1	1	4380104400	Retainer Assembly, Flywheel
295N	1	1	1	59264702G9	Washer
296N	1	1	1	59260702G9	Washer
850N	1	1	1	4380264012	Belt, Motor
905N	1	1	1	4380273502	Flywheel
919N	1	1	1	3483164020	Adjuster
946N	1	1	1	51300325B0	P.H. TAP. Screw P3 x 25
947N	1	1	1	51100308A9	B.H.M. Screw B3 x 8

8.8 [P08-99] SWITCH LOCATION FOR THE TAPE OPERATION



REF. DESIG.	Q'TY U	Q'TY C	Q'TY N	PART NO.	DESCRIPTION
068F	2	2	2	51380206P0	P.H. TAP. Screw P2 x 6
245N	1	1	1	51382606P0	P.H. TAP. Screw P2.6 x 6
911F	1	1	1	51060205A0	P.H.M. Screw P2 x 5
950N	1	1	1	4383160040	Bracket
952N	1	1	1	51060205A0	P.H.M. Screw P2 x 5
953N	1	1	1	51300308B0	P.H. TAP. Screw P3 x 8
S002	1	1	1	SM01010680	Mini Switch, Motor
S003	1	1	1	SM02010120	Mini Switch, Pause Muting
S004	1	1	1	SM01010660	Mini Switch, Play Muting
S005	1	1	1	SM02010080	Mini Switch, Rec. Muting
S009	1	1	1	SM01010580	Mini Switch, Play Timing

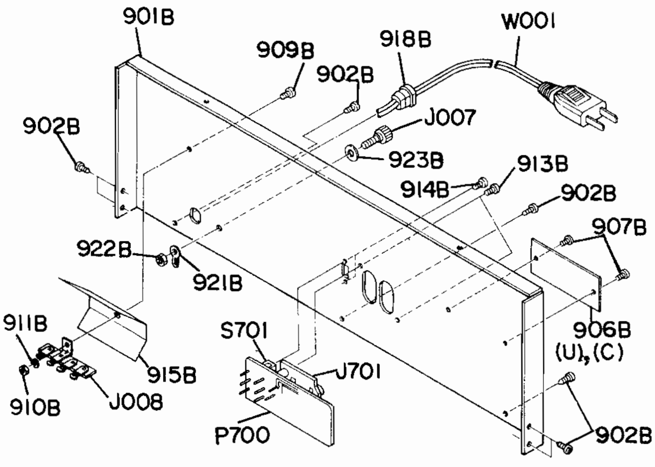
8.9 [P10-99] PARTS ASSEMBLED ON THE REVERSE OF THE CHASSIS


058N
057N
056N
055N
062N
M001
846N
820N
930N
845N
846N
061N
054N
G
285N
105N
070N
931N
931N
932N
234N
234N
263N
F
E
265N
234N
266N
863N
I
863N
D
C
264N
H
267N
851N
226N
262N
286N
261N
T
S
J
233N
232N
811N
305N
233N
232N
252N
810N
266N
063N
L

REF. DESIG.	Q'TY U	C	N	PART NO.	DESCRIPTION
C	1	1	1	4380354400	Lever Assembly, Rew
D	1	1	1	4380354410	Lever Assembly, Play
E	1	1	1	4380354420	Lever Assembly, F.F.
F	1	1	1	4380354430	Lever Assembly, Stop
G	1	1	1	4380354440	Lever Assembly, Pause
H	1	1	1	4380354450	Lever Assembly, Rec.
I	1	1	1	4380160400	Bracket Assembly, SW
J	1	1	1	4380001400	Idler Assembly
L	1	1	1	4383051400	Guide Assembly

REF. DESIG.	Q'TY U	C	N	PART NO.	DESCRIPTION
054N	1	1	1	4367115210	Spring
055N	1	1	1	4367112132	Shaft
056N	1	1	1	4367054030	Cam, Pause Lock
057N	1	1	1	4367115140	Spring
058N	1	1	1	59020805G9	Washer
061N	1	1	1	4367354070	Lever, Eject
062N	1	1	1	4380115062	Spring
063N	1	1	1	64001500R0	RG Ring E Type
070N	1	1	1	4367354062	Lever, Head Chassis
S	1	1	1	4367354400	Lever Assembly, FF
105N	1	1	1	4383002020	Arm, FF Idler Lever Lock
T	1	1	1	4367002420	Arm Assembly, T.M.S. Idler
226N	1	1	1	4367112180	Shaft
232N	2	2	2	4367055020	Collar, Lock Cam
233N	2	2	2	51300312B0	P.H. TAP. Screw P3 x 12
234N	4	4	4	64000300R0	RG Ring, E Type
252N	1	1	1	4380115052	Spring
261N	1	1	1	4367115090	Spring
262N	1	1	1	4367115120	Spring
263N	1	1	1	4367115252	Spring
264N	1	1	1	4367115263	Spring
265N	1	1	1	4367115270	Spring
266N	2	2	2	4367115280	Spring
267N	1	1	1	4380115070	Spring
285N	1	1	1	64002500R0	RG Ring, E Type
286N	1	1	1	64001500R0	RG Ring, E Type
305N	1	1	1	4367058012	Gear
810N	1	1	1	4367054030	Cam, Stop/Eject
811N	1	1	1	4383054020	Cam, Lock
820N	1	1	1	4380262012	Pulley
845N	1	1	1	4380160030	Bracket, Motor
846N	3	3	3	51300308B0	P.H. TAP. Screw P3 x 8
851N	1	1	1	4380264022	Belt, TMS
863N	2	2	2	51300308B0	P.H. TAP. Screw P3 x 8
930N	1	1	1	51610205A0	Set Screw, F.P.
931N	3	3	3	4383259010	Bushing
932N	3	3	3	4367112150	Shaft
M001	1	1	1	MM01200030	D.C. Motor

8.10 [P04-99] REAR PANEL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902B
J007
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902B
907B
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S701
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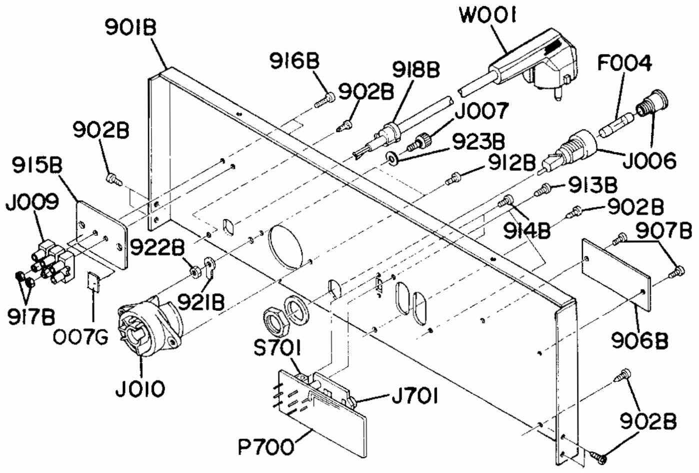
915B
J701
910B
J008
P700
902B

(U,C)


901B
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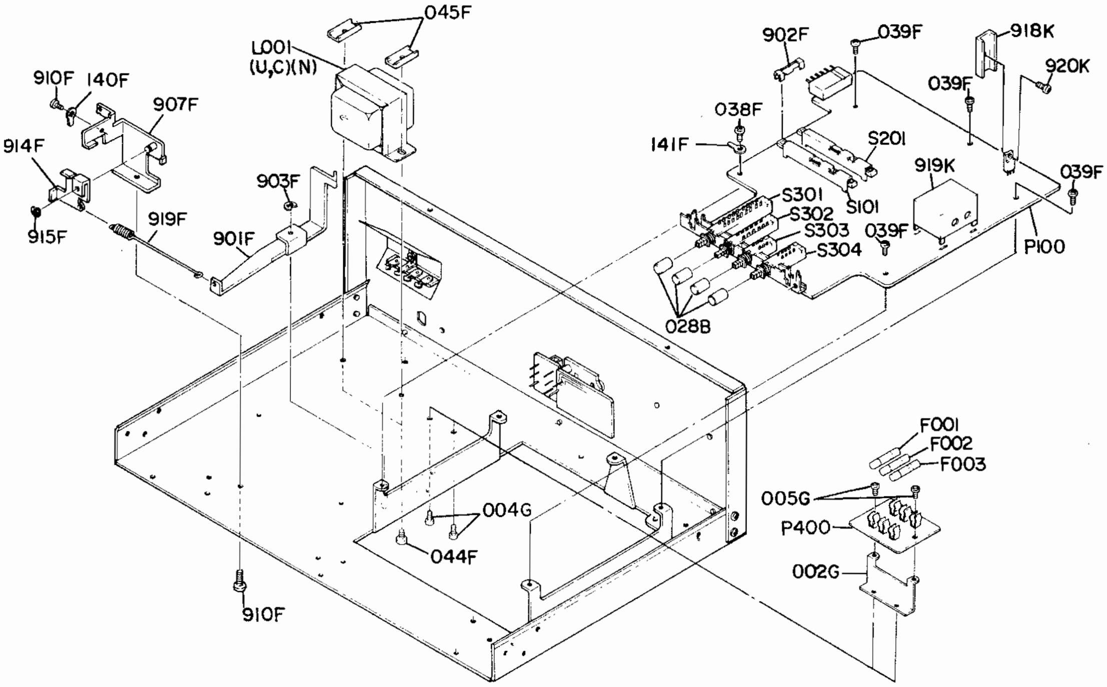
902B
914B
907B
922B
921B
917B
007G
S701
906B
J010
J701
902B
P700

(N)

REF. DESIG.	Q'TY U	Q'TY C	Q'TY N	PART NO.	DESCRIPTION
901B	1	1		4197160020	Bracket
901B			1	4197160010	Bracket
902B	7	7	7	51280306U0	B.H. TAP. Screw B3 x 6
906B	1			4197265012	Indicator
906B		1		4197265022	Indicator
906B			1	4197265030	Indicator
907B	2	2	2	51750306B9	OS Screw
909B	1	1		51100306S9	B.H.M. Screw B3 x 6
910B	1	1		53110303A9	Hexagon Nut
911B	1	1		54040302A0	Spring Washer
912B			2	51100306S9	B.H.M. Screw B3 x 6
913B	2	2	4	51280308U0	B.H. TAP. Screw B3 x 8
914B	2	2	2	51102604S0	B.H.M. Screw B2.6 x 4
915B	1	1		4114120010	Insulator
915B			1	4113120010	Insulator
916B			2	51100314S9	B.H.M. Screw B3 x 14
917B			1	2970005010	Clamper
918B	1	1		1455259030	Bushing
918B			1	1455259040	Bushing
921B	1	1	1	62040029W0	Lug
922B	1	1	1	53110403A9	Hexagon Nut
923B	1	1	1	54020401E0	Flat Washer, P
007G			1	2882861020	Label
J006			1	YJ08000220	Jack
J007	1	1	1	YL03010210	Terminal, Grand
J008	1	1		YL01040160	Terminal
J009			1	YL09030010	Terminal
J010			1	BY03110010	Plug
W001	1	1		YC02400220	AC Power Cord
W001			1	YC01900030	AC Power Cord
F004			1	FS10016800	Fuse 160 mAT

REF. DESIG.	Q'TY U	Q'TY C	Q'TY N	PART NO.	DESCRIPTION
					P700-REAR CIRCUIT BOARD
P700	1	1	1	YK41970010	P.W. Board, Rear
	1	1		ZZ41970010	P.W. Board Assembly
			1	ZZ41978010	P.W. Board Assembly
R711	1	1	1	GD05184140	Resistor, 180KΩ ±5% 1/4W
R712			1	GD05473140	Resistor, 47KΩ ±5% 1/4W
R721	1	1	1	GD05184140	Resistor, 180KΩ ±5% 1/4W
R722			1	GD05473140	Resistor, 47KΩ ±5% 1/4W
J701	1	1		YT02040150	Terminal
J701			1	BY01050060	Jack
J702	1	1	1	YP10001200	Plug
J711					
≀	1	1	1	YP10001200	Plug
J715					
J721					
≀	1	1	1	YP10001200	Plug
J725					
S701	1	1	1	SS02020420	Slide Switch

8.11 [M01-99] P.W. BOARD AND GENERAL PARTS



REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
028B	4	4	4	3448154060	Knob
038F	1	1	1	51100306A9	B.H.M. Screw, B3 x 6
039F	4	4	4	51100306A9	B.H.M. Screw B3 x 6
044F	2	2	2	51100408A9	B.H.M. Screw B4 x 8
045F	2	2	2	2922005010	Clamper
140F	1	1	1	62031650W0	Lug
141F	1	1	1	62031650W0	Lug
901F	1	1	1	4197002012	Arm
902F	1	1	1	4197354030	Lever
903F	1	1	1	64000300R0	RG Ring, E Type
907F	1	1	1	4197104502	Retainer
910F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
911F	1	1	1	51060205A0	P.H.M. Screw P2.6 x 5
914F	1	1	1	4197354010	Lever
915F	1	1	1	64000300R0	RG, Ring, E Type
918K	1	1	1	2915267020	Heatsink
919K	1	1	1	3322109022	Shield
919F	1	1	1	4197115010	Spring
920K	1	1	1	51100306S9	B.H.M. Screw B3 x 6
002G			1	3889160110	Bracket
004G			2	51100306A9	B.H.M. Screw B3 x 6
005G			2	51100306A9	B.H.M. Screw B3 x 6
F001			1	FS10050800	Fuse 500 mAT
F002			1	FS10050800	Fuse 800 mAT
F003			1	FS10140800	Fuse 1.4 AT
L001	1	1		TS15401190	Power Transf.
L001			1	TS15401200	Power Transf.

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
					P100-PRE-AMP. CIRCUIT BOARD
P100	1	1	1	YK41971310	P.W. Board, Pre-Amp.
	1	1	1	ZZ41971310	P.W. Board Assembly
					P100-CAPACITORS
C101	1	1	1	EE10601640	Elect, 10µF 16V
C102	1	1	1	DK16471010	Ceramic, 470pF ±10%
C103	1	1	1	EA47602590	Elect, 47µF 25V
C104	1	1	1	EA10701090	Elect, 100µF 10V
C105	1	1	1	DD16101010	Ceramic, 100pF ±10%
C106	1	1	1	DF15153010	Film, 0.015µF ±5%
C107	1	1	1	DD16500010	Ceramic, 50pF ±10%
C108	1	1	1	EA10601690	Elect, 100F 16V
C109	1	1	1	EA22505090	Elect, 2.2µF 50V
C110	1	1	1	EA22405040	Elect, 0.22µF 50V
C111	1	1	1	DD16101010	Ceramic, 100pF ±10%
C112	1	1	1	DD16500010	Ceramic, 50pF ±10%
C113	1	1	1	EA47601090	Elect, 47µF 10V
C114	1	1	1	DD15820010	Ceramic, 82pF ±5%
C115	1	1	1	DF15332010	Film, 3300pF ±5%
C116	1	1	1	DF15222010	Film, 2200pF ±5%
C117	1	1	1	DF15392010	Film, 3900pF ±5%
C118	1	1	1	EA22505090	Elect, 2.2µF 50V
C119	1	1	1	DF15104010	Film, 0.1µF ±5%
C120	1	1	1	EA10601690	Elect, 10µF 16V

REF. DESIG.	Q'TY U	Q'TY C	Q'TY N	PART NO.	DESCRIPTION
C121	1	1	1	EM10402510	Elect, 0.1µF 25V
C122	1	1	1	EM33402510	Elect, 0.33µF 25V
C123	1	1	1	EA47601090	Elect, 47µF 10V
C124	1	1	1	DF15472010	Film, 4700pF ±5%
C125	1	1	1	DF15153010	Film, 0.015µF ±5%
C126	1	1	1	DF15153010	Film, 0.015µF ±5%
C127	1	1	1	EM33402510	Elect, 0.33µF 25V
C128	1	1	1	EA10601690	Elect, 10µF 16V
C129	1	1	1	EA10601690	Elect, 10µF 16V
C130	1	1	1	EA22505090	Elect, 2.2µF 50V
C131	1	1	1	EA47405090	Elect, 0.47µF 50V
C132	1	1	1	DK16501010	Ceramic, 500pF ±10%
C133	1	1	1	EA47602590	Elect, 47µF 25V
C134	1	1	1	EA47502590	Elect, 4.7µF 25V
C135	1	1	1	DF15224010	Film, 0.22µF ±5%
C136	1	1	1	EA47502590	Elect, 4.7µF 25V
C137	1	1	1	DF15223010	Film, 0.022µF ±5%
C138	1	1	1	DF15183010	Film, 0.018µF ±5%
C139	1	1	1	DF15473010	Film, 0.047µF ±5%
C140	1	1	1	EA47502590	Elect, 4.7µF 25V
C141	1	1	1	DF15152010	Film, 1500pF ±5%
C142	1	1	1	DF65151010	Film, 1500pF ±5%
C143	1	1	1	DF65271510	Film, 270pF ±5%
C144	1	1	1	EA33502590	Elect, 3.3µF 25V
C201	1	1	1	EE10601640	Elect, 10µF 16V
C202	1	1	1	DK16471010	Ceramic, 470pF ±10%
C203	1	1	1	EA47602590	Elect, 47µF 25V
C204	1	1	1	EA10701090	Elect, 100µF 10V
C205	1	1	1	DD16101010	Ceramic, 100pF ±10%
C206	1	1	1	DF15153010	Film, 0.015µF ±5%
C207	1	1	1	DD16500010	Ceramic, 50pF ±10%
C208	1	1	1	EA10601690	Elect, 10µF 16V
C209	1	1	1	EA22505090	Elect, 2.2µF 50V
C210	1	1	1	EE22405040	Elect, 0.22µF 50V
C211	1	1	1	DD16101010	Ceramic, 100pF ±10%
C212	1	1	1	DD16500010	Ceramic, 50pF ±10%
C213	1	1	1	EA47601090	Elect, 47µF 10V
C214	1	1	1	DD15820010	Ceramic, 82pF ±5%
C215	1	1	1	DF15332010	Film, 3300pF ±5%
C216	1	1	1	DF15222010	Film, 2200pF ±5%
C217	1	1	1	DF15392010	Film, 3900pF ±5%
C218	1	1	1	EA22505090	Elect, 2.2µF 50V
C219	1	1	1	DF15104010	Film, 0.1µF ±5%
C220	1	1	1	EA10601690	Elect, 10µF 16V
C221	1	1	1	EM10402510	Elect, 0.1µF 25V
C222	1	1	1	EM33402510	Elect, 0.33µF 25V
C223	1	1	1	EA47601090	Elect, 47µF 10V
C224	1	1	1	DF15472010	Film, 4700pF ±5%
C225	1	1	1	DF15153010	Film, 0.015µF ±5%
C226	1	1	1	DF15153010	Film, 0.015µF ±5%
C227	1	1	1	EM33402510	Elect, 0.33µF 25V
C228	1	1	1	EA10601690	Elect, 10µF 16V
C229	1	1	1	EA10601690	Elect, 10µF 16V
C230	1	1	1	EA22505090	Elect, 2.2µF 50V
C231	1	1	1	EA47405090	Elect, 0.47µF 50V
C232	1	1	1	DK16501010	Ceramic, 500pF ±10%
C233	1	1	1	EA47602590	Elect, 47µF 25V
C234	1	1	1	EA47502590	Elect, 4.7µF 25V
C235	1	1	1	DF15224010	Film, 0.22µF ±5%
C236	1	1	1	EA47502590	Elect, 4.7µF 25V
C237	1	1	1	DF15223010	Film, 0.022µF ±5%
C238	1	1	1	DF15183010	Film, 0.018µF ±5%
C239	1	1	1	DF15473010	Film, 0.047µF ±5%
C240	1	1	1	EA47502590	Elect, 4.7µF 25V
C241	1	1	1	DF15152010	Film, 1500pF ±5%
C242	1	1	1	DF65151010	Film, 150pF ±5%
C243	1	1	1	DF65271510	Film, 270pF ±5%
C244	1	1	1	EA33502590	Elect, 3.3µF 25V
C301	1	1	1	DF16223510	Film, 0.022µF ±10% 100V
C302	1	1	1	EE10505040	Elect, 1µF 50V
C303	1	1	1	DF16102510	Film, 1000pF ±10%
C304	1	1	1	DF16102050	Film, 1000pF ±10%
C305	1	1	1	DF16102510	Film, 1000pF ±10%
C306	1	1	1	EA10701090	Elect, 100µF 10V
C307	1	1	1	DF17103500	Film, 0.01µF 200V
C308	1	1	1	DF17103500	Film, 0.01µF 200V
C309	1	1	1	DF17103500	Film, 0.01µF 200V
C310	1	1	1	DF17103500	Film, 0.01µF 200V
C311	1	1	1	EA47703590	Elect, 470µF 35V
C312	1	1	1	EA47703590	Elect, 470µF 35V
C313	1	1	1	EA47702590	Elect, 470µF 25V
C314	1	1	1	EA10702590	Elect, 100µF 25V
C315	1	1	1	DK17103010	Ceramic, 0.01µF 50V
C316	1	1	1	DK17103010	Ceramic, 0.01µF 50V
C317	1	1	1	DK17103010	Ceramic, 0.01µF 50V
C318	1	1	1	DK17103010	Ceramic, 0.01µF 50V
C319	1	1	1	EA10802590	Elect, 1000µF 25V
C320	1	1	1	DK18403010	Ceramic, 0.04µF 25V
C321	1	1	1	EA10801090	Elect, 1000µF 10V
C322	1	1	1	EA10601690	Elect, 10µF 16V
C323	1	1	1	EA10701690	Elect, 100µF 16V

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
					P100-PLUG
J101 ≀ J141	1	1	1	YP10001130	Plug
J201 ≀ J241	1	1	1	YP10001130	Plug
J301 ≀ J323	1	1	1	YP10001130	Plug
J331	1	1	1	YP06001060	Plug
					P100-RESISTORS **(All resistors are ±5% and 1/4W)**
R101	1	1	1	GD05561140	560Ω
R102	1	1	1	GD05123140	12KΩ
R103	1	1	1	GD05100140	10Ω
R104	1	1	1	GD05104140	100KΩ
R105	1	1	1	GD05394140	390KΩ
R106	1	1	1	GD05331140	330Ω
R107	1	1	1	GD05154140	150KΩ
R108	1	1	1	GD05332140	3.3KΩ
R109	1	1	1	GD05512140	5.1KΩ
R110	1	1	1	RA03020030	Trimming, 3KΩ Play EQ
R111	1	1	1	GD05682140	6.8KΩ
R112	1	1	1	GD05562140	5.6KΩ
R113	1	1	1	GD05561140	560Ω
R114	1	1	1	RA05030090	Trimming, 50KΩ Play Level
R115	1	1	1	GD05103140	10KΩ
R116	1	1	1	GD05124140	120KΩ
R117	1	1	1	GD05331140	330Ω
R118	1	1	1	GD05682140	6.8KΩ
R119	1	1	1	GD05154140	150KΩ
R120	1	1	1	GD05332140	3.3KΩ
R121	1	1	1	GD05241140	240Ω
R122	1	1	1	GD05151140	150Ω
R123	1	1	1	GD05332140	3.3KΩ
R124	1	1	1	GD05473140	47KΩ
R125	1	1	1	GD05123140	12KΩ
R126	1	1	1	GD05274140	270KΩ
R127	1	1	1	GD05274140	270KΩ
R128	1	1	1	GD05181140	180Ω
R129	1	1	1	GD05104140	100KΩ
R130	1	1	1	GD05122140	1.2KΩ
R131	1	1	1	GD05105140	1MΩ
R132	1	1	1	GD05473140	47KΩ
R133	1	1	1	GD05392140	3.9KΩ
R134	1	1	1	GD05821140	820Ω
R135	1	1	1	GD05152140	1.5KΩ
R136	1	1	1	GD05222140	2.2KΩ
R137	1	1	1	GD05333140	33KΩ
R138	1	1	1	GD05362140	3.6KΩ
R139	1	1	1	GD05103140	10KΩ
R140	1	1	1	RA02030060	Trimming, 20KΩ Rec. Level

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R141	1	1	1	GD05104140	100KΩ
R142	1	1	1	GJ05681010	680Ω 1W
R143	1	1	1	RA02020180	Trimming, 2KΩ Meter Adj.
R144	1	1	1	GD05151140	150Ω
R145	1	1	1	GD05103140	10KΩ
R146	1	1	1	GD05103140	10KΩ
R147	1	1	1	GD05274140	270KΩ
R148	1	1	1	GD05473140	47KΩ
R149	1	1	1	GD05472140	4.7KΩ
R150	1	1	1	GD05102140	1KΩ
R151	1	1	1	GD05220140	22Ω
R152	1	1	1	GD05680140	68Ω
R153	1	1	1	GD05182140	1.8KΩ
R154	1	1	1	GD05103140	10KΩ
R155	1	1	1	GD05561140	560Ω
R156	1	1	1	RA01040170	Trimming, 100KΩ Bias Adj.
R157	1	1	1	GD05562140	5.6KΩ
R159	1	1	1	GD05561140	560Ω
R201	1	1	1	GD05561140	560Ω
R202	1	1	1	GD05123140	12KΩ
R203	1	1	1	GD05100140	10Ω
R204	1	1	1	GD05104140	100KΩ
R205	1	1	1	GD05394140	390KΩ
R206	1	1	1	GD05331140	330Ω
R207	1	1	1	GD05154140	150KΩ
R208	1	1	1	GD05332140	3.3KΩ
R209	1	1	1	GD05512140	5.1KΩ
R210	1	1	1	RA03020030	Trimming, 3KΩ Play EQ
R211	1	1	1	GD05682140	6.8KΩ
R212	1	1	1	GD05562140	5.6KΩ
R213	1	1	1	GF05561140	560Ω
R214	1	1	1	RA05030090	Trimming, 50KΩ Play Level
R215	1	1	1	GD05103140	10KΩ
R216	1	1	1	GD05124140	120KΩ
R217	1	1	1	GD05331140	330Ω
R218	1	1	1	GD05682140	6.8KΩ
R219	1	1	1	GD05154140	150KΩ
R220	1	1	1	GD05332140	3.3KΩ
R221	1	1	1	GD05241140	240Ω
R222	1	1	1	GD05151140	150Ω
R223	1	1	1	GD05332140	3.3KΩ
R224	1	1	1	GD05473140	47KΩ
R225	1	1	1	GD05123140	12KΩ
R226	1	1	1	GD05274140	270KΩ
R227	1	1	1	GD05274140	270KΩ
R228	1	1	1	GD05181140	180Ω
R229	1	1	1	GD05104140	100KΩ
R230	1	1	1	GD05122140	1.2KΩ
R231	1	1	1	GD05105140	1MΩ
R232	1	1	1	GD05473140	47KΩ
R233	1	1	1	GD05392140	3.9KΩ
R234	1	1	1	GD05821140	820Ω
R235	1	1	1	GD05152140	1.5KΩ
R236	1	1	1	GD05222140	2.2KΩ
R237	1	1	1	GD05333140	33KΩ
R238	1	1	1	GD05362140	3.6KΩ
R239	1	1	1	GD05103140	10KΩ
R240	1	1	1	RA02030060	Trimming, 20KΩ REC Level

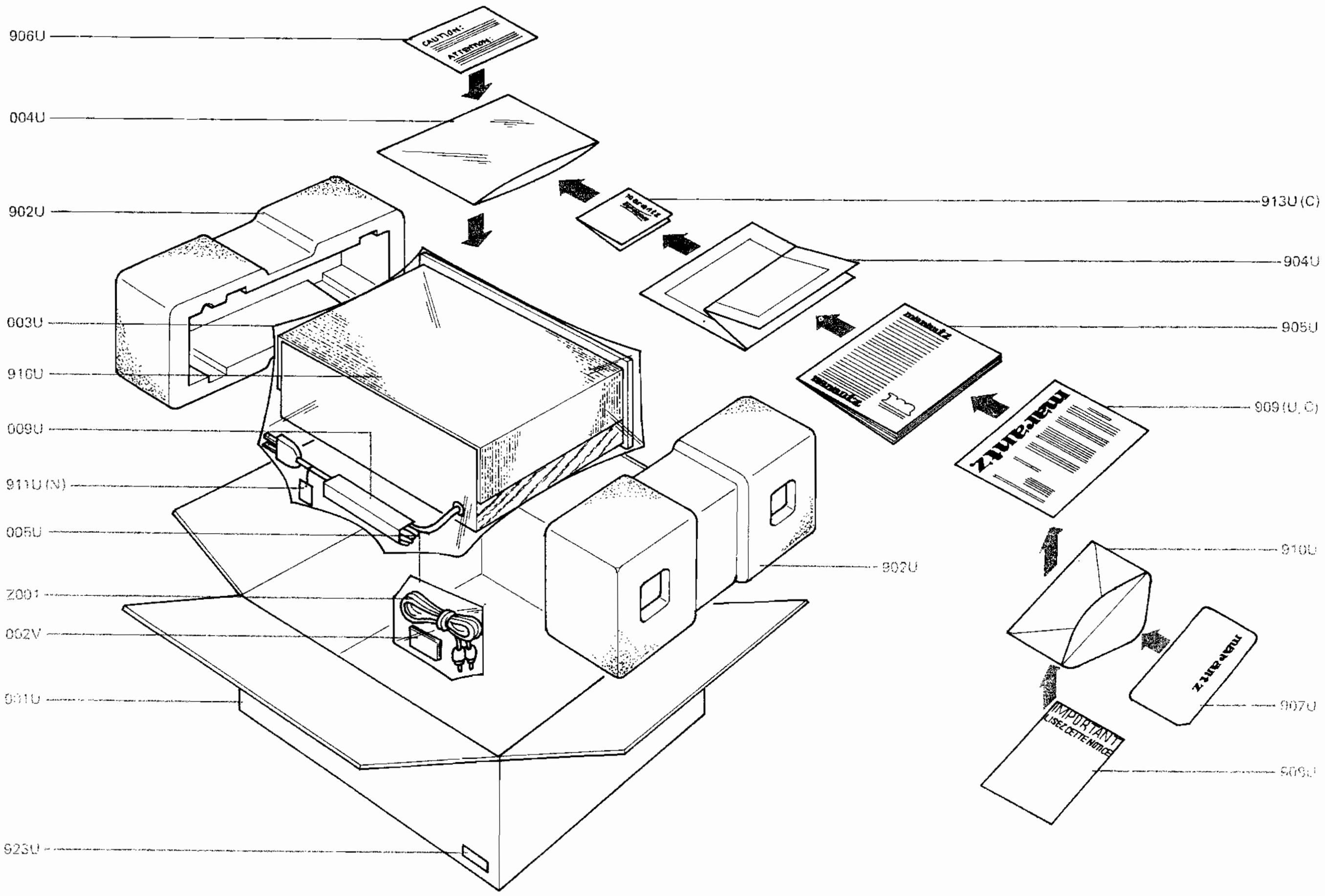
REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
R241	1	1	1	GD05104140	100KΩ
R242	1	1	1	GJ05681010	680Ω 1W
R243	1	1	1	RA02020180	Trimming, 2KΩ Meter Adj.
R244	1	1	1	GD05151140	150Ω
R245	1	1	1	GD05103140	10KΩ
R246	1	1	1	GD05103140	10KΩ
R247	1	1	1	GD05274140	270KΩ
R248	1	1	1	GD05473140	47KΩ
R249	1	1	1	GD05472140	4.7KΩ
R250	1	1	1	GD05102140	1KΩ
R251	1	1	1	GD05220140	22Ω
R252	1	1	1	GD05680140	68Ω
R253	1	1	1	GD05182140	1.8KΩ
R254	1	1	1	GD05103140	10KΩ
R255	1	1	1	GD05561140	560Ω
R256	1	1	1	RA01040170	Trimming, 100KΩ Bias Adj.
R257	1	1	1	GD05562140	5.6KΩ
R259	1	1	1	GD05561140	560Ω
R301	1	1	1	GD05390140	39Ω
R302	1	1	1	GD05390140	39Ω
R303	1	1	1	GD05154140	150KΩ
R304	1	1	1	GD05154140	150KΩ
R305	1	1	1	GJ05471010	470Ω 1W
R306	1	1	1	GJ05561010	560Ω 1W
R307	1	1	1	GD05154140	150KΩ
R308	1	1	1	GD05101140	100Ω
R309	1	1	1	GJ05102010	1KΩ 1W
R310	1	1	1	GD05471140	470Ω
R311	1	1	1	GJ05100010	10Ω 1W
R312	1	1	1	GJ05821010	820Ω 1W
R313	1	1	1	GD05511140	510Ω
R314	1	1	1	GD05511140	510Ω
R315	1	1	1	RA02030060	Trimming, 20KΩ Law Control
R317	1	1	1	GF05331140	330Ω
					P100-SWITCHES
S101	1	1	1	SS09020070	Slide, Rec/Play
S201	1	1	1	SS09020070	Slide, Rec/Play
S301	1	1	1	SP08040060	Push, EQ
S302	1	1	1	SP08040060	Push, Bias
S303	1	1	1	SP08040060	Push, Limiter
S304	1	1	1	SP08040060	Push, Dolby NR
					P100-COILS
L101	1	1	1	LC23960020	Choke, 39mH ±5%
L102	1	1	1	LC22260040	Choke, 22mH
L103	1	1	1	LC24750040	Choke, 4.7mH Rec. EQ
L104	1	1	1	LC22260040	Choke, 22mH ±5%
L201	1	1	1	LC23960020	Choke, 39mH ±5%
L202	1	1	1	LC22260040	Choke, 22mH
L203	1	1	1	LC24750040	Choke, 4.7mH Rec. EQ
L204	1	1	1	LC22260040	Choke, 22mH ±5%
L301	1	1	1	TC10180072	OSC Transf.
L302	1	1	1	LC12240050	Choke, 220μH ±10%

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
					P100-SEMICONDUCTORS
Q101	1	1	1	HC10012060	IC, UPC1024H
Q102	1	1	1	HT317400S0	Transistor, 2SC1740LN(S)
Q103	1	1	1	HT317400S0	Transistor, 2SC1740LN(S)
Q104	1	1	1	HT309451P0	Transistor, 2SC945(P)
Q105	1	1	1	HT309451Q0	Transistor, 2SC945(Q)
Q106	1	1	1	HT309451Q0	Transistor, 2SC945(Q)
Q107	1	1	1	HT402272A0	Transistor, 2SD227(Q or V)
Q108	1	1	1	HD20011050	Diode, 1S1555
Q109	1	1	1	HD10003020	Diode, 1OA90
Q110	1	1	1	HD20011050	Diode, 1S1555
Q111	1	1	1	HD20011050	Diode, 1S1555
Q112	1	1	1	HD10003020	Diode, 2OA90
Q113	1	1	1	HD10003020	Diode, 2OA90
Q114	1	1	1	HD10003020	Diode, 2OA90
Q115	1	1	1	HT309451P0	Transistor, 2SC945(P)
Q201	1	1	1	HC10012060	IC, UPC1024H
Q202	1	1	1	HT317400S0	Transistor, 2SC1740LN(S)
Q203	1	1	1	HT317400S0	Transistor, 2SC1740LN(S)
Q204	1	1	1	HT309451P0	Transistor, 2SC945(P)
Q205	1	1	1	HT309451Q0	Transistor, 2SC945(Q)
Q206	1	1	1	HT309451Q0	Transistor, 2SC945(Q)
Q207	1	1	1	HT402272A0	Transistor, 2SD227 (Q or V)
Q208	1	1	1	HD20011050	Diode, 1S1555
Q209	1	1	1	HD10003020	Diode, 2OA90
Q210	1	1	1	HD20011050	Diode, 1S1555
Q211	1	1	1	HD20011050	Diode, 1S1555
Q212	1	1	1	HD10003020	Diode, 2OA90
Q213	1	1	1	HD10003020	Diode, 2OA90
Q214	1	1	1	HD10003020	Diode, 2OA90
Q215	1	1	1	HT309451P0	Transistor, 2SC945(P)
Q301	1	1	1	HC10026010	IC
Q302	1	1	1	HT313181R0	Transistor, 2SC1318(R)
Q303	1	1	1	HT313181R0	Transistor, 2SC1318(R)
Q304	1	1	1	HT309451Q0	Transistor, 2SC945(Q)
Q305	1	1	1	HD20011050	Diode, 1S1555
Q306	1	1	1	HD30033090	Zener, WZ052
Q307	1	1	1	HD20017100	Diode, 10DC1R
Q308	1	1	1	HD20016100	Diode, 10DC1N
Q309	1	1	1	HD30048090	Zener
Q310	1	1	1	HT403131E0	Transistor, 2SD313(E)
Q311	1	1	1	HD20017100	Diode, 10DC1R
Q312	1	1	1	HD20016100	Diode, 10DC1N

<table>
<tr><th rowspan="2">REF. DESIG.</th><th colspan="3">Q'TY</th><th rowspan="2">PART NO.</th><th rowspan="2">DESCRIPTION</th></tr>
<tr><th>U</th><th>C</th><th>N</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>P400-FUSE CIRCUIT BOARD</td></tr>
<tr><td>P400</td><td></td><td></td><td>1</td><td>YK41971330</td><td>P.W. Board, Fuse</td></tr>
<tr><td></td><td></td><td></td><td>1</td><td>ZZ41971330</td><td>P.W. Board Assembly</td></tr>
<tr><td>J401
≀
J406</td><td></td><td></td><td>1</td><td>YP10001200</td><td>Plug</td></tr>
<tr><td>J407
≀
J412</td><td></td><td></td><td>1</td><td>YJ08000200</td><td>Jack, Fuse Clip</td></tr>
</table>

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

8.12 [H01-99] PACKING MATERIALS


906U
004U
902U
003U
916U
009U
911U (N)
005U
Z001
002V
901U
923U
CAUTION:
ATTENTION:
913U (C)
904U
905U
909 (U, C)
910U
907U
908U
902U
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IMPORTANT
LISEZ CETTE NOTICE

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
003U	1	1	1	9014538350	Polyethy Bag
004U	1	1	1	9013025010	Polyethy Bag
005U	1	1	1	9011325010	Polyethy Bag
009U	1	1	1	2864804010	Sleeve
901U	1	1	1	4197801010	Packing Case
902U	2	2	2	4197809010	Cushion
904U	1			4197851020	Instructions
904U		1	1	4197851030	Instructions
905U	1			4197851010	Instructions
905U		1	1	4197851310	Instructions
906U	1			2818851040	Instructions
906U		1	1	2818851140	Instructions
907U	1			2577854012	Guarantee Card
907U		1	1	9630000180	Guarantee Card
908U	1			2577851020	Instructions
908U		1	1	2818851120	Instructions
909U	1			2818854023	Guarantee Card
909U		1		2818854042	Guarantee Card
910U	1			2577813010	Envelope
910U		1		2918813012	Envelope

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	N		
910U			1	2818813010	Envelope
911U			1	9560000042	Hang Tag
912U		2		9510901020	Label
913U		1		9650000050	S. Station Card
916U	1	1	1	2918107150	Sheet
923U	3			9522815010	Serial No. Card
923U		3		9523015120	Serial No. Card
923U			3	9523015130	Serial No. Card
Z001	2	2		ZD01200062	Connective Cord
Z001			1	ZD02000070	Connective Cord
002V	1	1	1	4136071010	Cleaner

9. GENERAL SPECIFICATIONS

Style	Front Load
Tape Drive System	Single Capstan Drive
Cartridge	Philips Type Compact Cassette
Track System	Compatible Stereo 4 Track 2 Channel
Tape Speed	1-7/8 ips (4.8 cm/sec.)
Head	R/P — Super Hard Permalloy, Erase-Ferrite
Motor	DC Servo Controlled Motor x 1
Meters	VU Type x 2
Recording System	AC Bias
Erasing System	AC Erase
Semiconductors	
Transistors	22
IC's	3
Diodes	25
LED's	2
Line Input Sensitivity	
Level	–22 dBV
Impedance	180 kohms
Headphone Output	
Level	43 mV
Impedance	150 ohms
Mic Input Sensitivity	
Level	–72 dBV
Impedance	8.2 kohms
Fast Rewind Time	105
Fast Forward Time	105
AC Line Voltage	120 V AC, 60 Hz (for U.S.A. and Canada) 110/120/220 V or 240 V AC, 50/60 Hz (for Europe)
Power Consumption	11 Watts
Dimensions (W x H x D)	17-3/8" x 5-3/4" x 11-11/16"
Weight	14 lbs 12 oz

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